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MONTHLY INTERNATIONAL FEATURE ISSUE

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The OIL WEEKLY

FOR THE DRILLING, PRODUCING, PIPE LINE INDUSTRY

Adding **EXTRA** *safety*

TO HIGH PRESSURE WELL HEADS . . .

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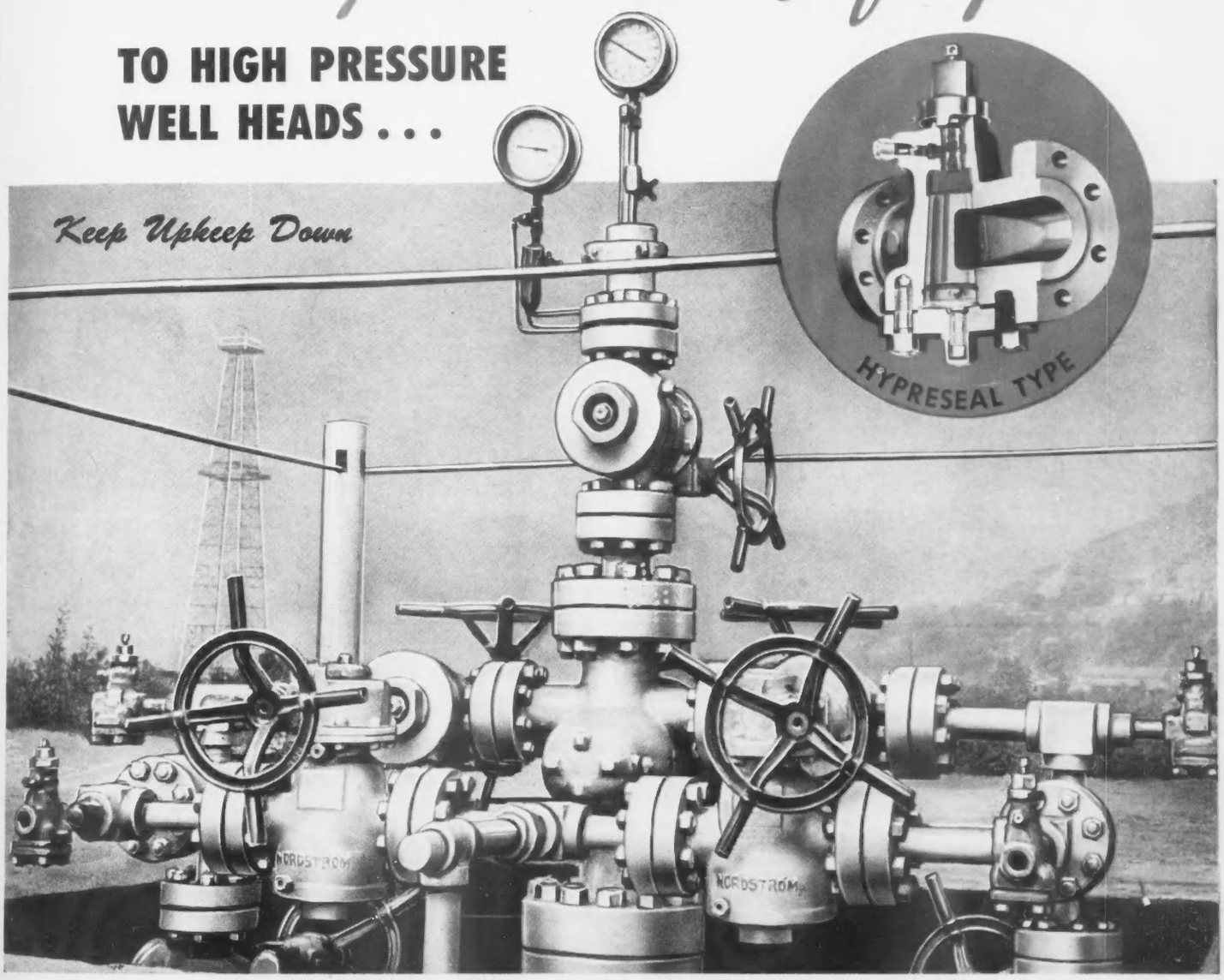

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June 3, 1946

VOLUME 122, NUMBER 1

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The OIL WEEKLY

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Looking Ahead

WITH THE EDITOR

PROCEDURES and practices in marine drilling are rapidly advancing as heavy rigs explore the earth's crust at sites increasingly distant from the continental shores. With the advancements in drilling techniques, it is necessary to extend all the safety precautions of which we have any knowledge.

DISPOSAL DOUGHNUT

"Oil Separator Raft Applicable to Marine Drilling" by J. E. Kastrop, staff writer, to appear in the next issue of THE OIL WEEKLY, presents the answer to one of the problems of fire hazard in marine operations. The exigencies of the war and its accompanying tanker traffic have given to the marine drilling operator this unique device in eliminating a fire hazard in exploring for oil in water surroundings. Captain E. R. Vorenkamp of San Francisco developed an oil separator raft which makes the problem of knocking out lighter fluids from water-oil mixtures a simple and convenient matter. The application of this device will confine the waste oil from drilling operations to a floating tank which permits systematic disposal of such sludge accumulations and eliminating their presence around the drilling site. During the latter months of 1945, the application of the oil separator raft saved the Navy $200,000 each month in fuel costs and barging expenses.

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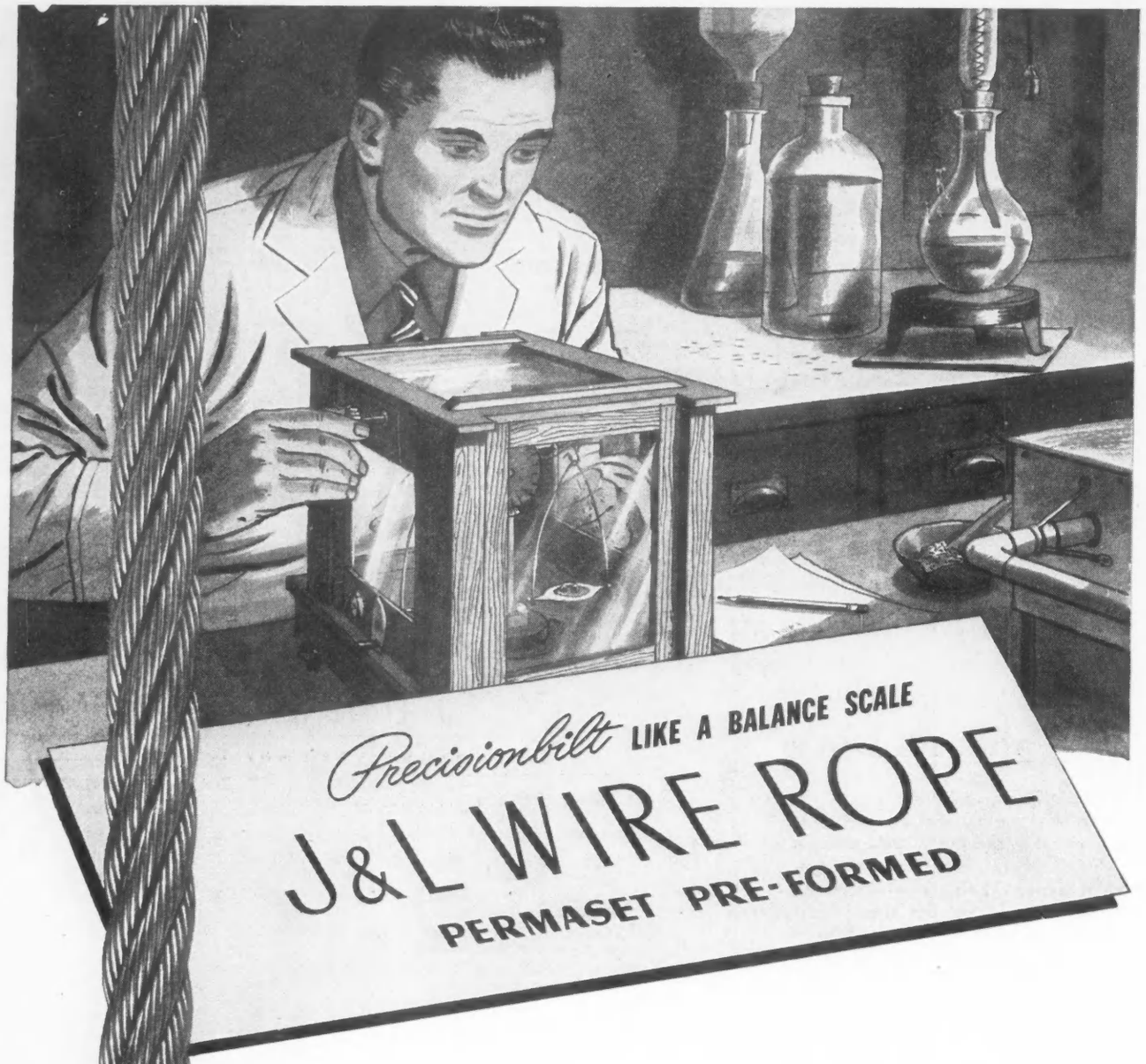

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Oil Development Enjoying Big Push

MORE wells are being drilled in the United States this year than generally expected. Total completions have been about 12 percent more numerous in the first 5 months of 1946 than in the corresponding months of 1945. Wildcat completions show an increase of nearly 3 percent and are the highest on record.

Several factors are responsible for this substantial increase which is occurring in the face of expectations at year's beginning that there would be no material increase or a decrease.

These include the surprisingly heavy continuing demand for petroleum, the slight increase in crude oil prices, the promised entire elimination of price controls in the industry, and the perceptible increase in operating efficiency through benefit of return from the services of many skilled oil industry workers.

If the drilling trend of the first 5 months continues, 29,000 to 30,000 wells may be completed this year, compared with about 25,500 last year. Prewar normal was about 30,000 wells annually.

The current trend is a manifestation of a strong undercurrent in the direction of vigorous, intensive search for and development of new crude reserves. Although many postwar problems and disturbances affect drilling, the definite, real need for more oil wells and especially more oil fields is obvious. The industry can count upon greater demand for petroleum in the years ahead than ever existed before in war or peace. The nation should emerge in a few years into an era of great activity in all lines, involving heavy use of petroleum for many purposes. As in the past, there will be a strong demand for oils, nearly always increasing, seldom interrupted. The mechanical age has not reached its maturity but will have further vast development. With it will go the petroleum industry, supplying the fuels for the machines in greater volumes and in improved grades and more varieties.

Oil companies which expect to help supply the great demand of the coming active years recognize that they must lose no time in bolstering and increasing their crude reserves. Each company must constantly be acquiring new source of supply or eventually go out of business. The far-sighted companies never lost sight of this fact. Accordingly, they are pursuing today definite, aggressive policies on reserves, being committed to long range programs of vigorous exploratory and development work.

The future will bring greater use of petroleum, and the companies which will profit most in supplying it will be those which have it to supply, by virtue of development they are now pushing.

Desperately in Need of Relief

CLAUDE P. PARSONS, of Duncan, Okla., vice president of Halliburton Oil Well Cementing Company, wired the White House on May 25 as follows:

I have just returned from a 26,000-mile trip to various countries in Europe, Africa and Asia and there is one country in which the conditions are so pitiful and the people are so desperately in need of relief that I must call it to your attention. Although the deplorable conditions in that country are self-inflicted, the remedy is also within its own grasp. Fortunately, that country does not need money or food. It merely needs an awakening of the political party now in power to the tremendous economic collapse that is not far in the future if that party continues to think more of votes from pressure groups than it does of the American people. Yes, I am talking about the United States, my own country, and I urge immediate repeal of the Wagner Act which is the basic cause of the pressure group monstrosity that arouses my feeling for my own people after analyzing my long journey just completed to other lands. We do not need bread yet, but are desperately in need of something more important—common sense in our own government.

Industrial Scientists "Go Back to School"

INDUSTRIAL scientists at Monsanto Chemical Company will be given an opportunity to return to universities of their choice for an academic year of study at full salary, according to Dr. Carroll A. Hochwalt, Director of Central Research for the company.

Hochwalt, addressing the National Industrial Conference Board, said the plan was established by Montanto's executive committee to encourage the scientific work and development of technical personnel in physics, chemistry and chemical engineering. Four leaves will be granted each year, and will be made on the basis of especially meritorious service and outstanding performance in scientific work.

Such a plan for refresher courses and original research, he added, will not only be beneficial to the individuals but also will help to introduce fresh points of view in industrial research.

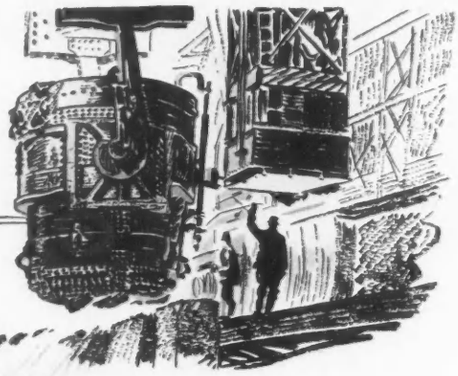
Hochwalt said that as a result of closely integrated efforts during the war, industrial scientists and academicians have learned to work together as a team and have developed better understanding and mutual respect. Continuation of this teamwork must be encouraged, he added, for the greater development of both. Hochwalt predicted that by 1950, industrial research will have increased 200-fold since 1920 with about 3500 laboratories and 150,000 scientific personnel. The number of industrial laboratories was 2350 with 70,000 scientists and expenditures of more than $250,000,000 in 1940, he said.

☆

The state is a utensil to serve the people, not an agency to penalize them. Its purpose is to increase their advantages, not multiply their disadvantages. Its aim is to lighten their load, not increase their burdens. Its function is to develop additional opportunities, not to discount what they have.

—ROBERT S. KERR, Governor of Oklahoma.

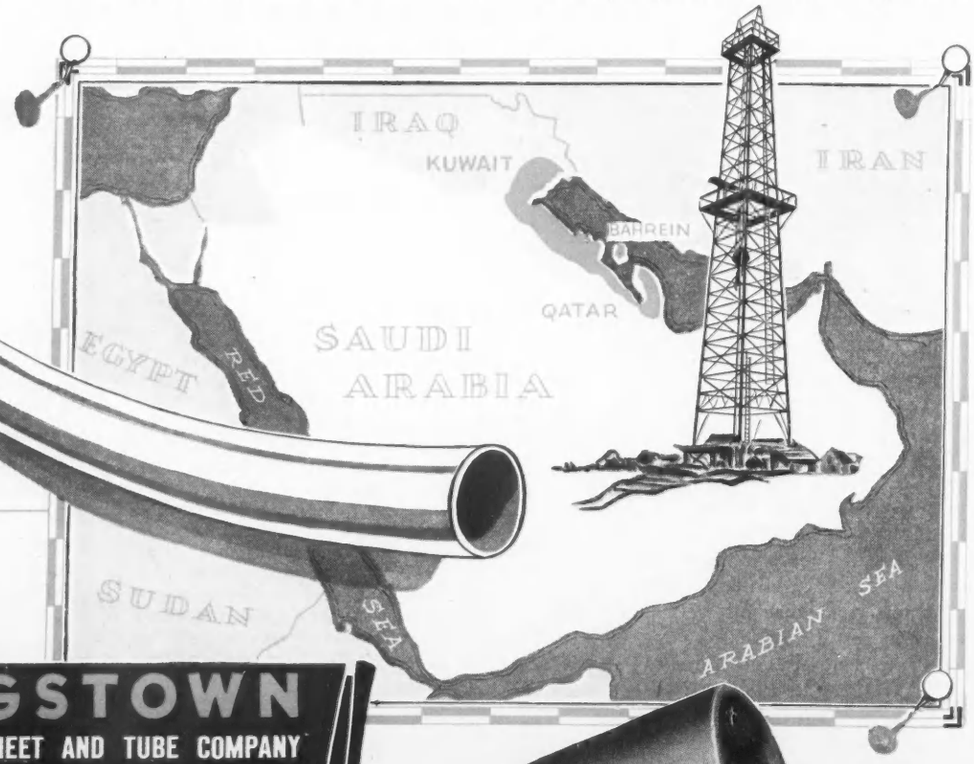
Youngstown to SAUDI ARABIA



SPEAK of undeveloped oil and the eyes of the world focus on the Near East. Four Western Countries control the oil rights in this area touching the Persian Gulf in which are located large proven petroleum reserves.

American oil companies own about 40% of the concessions. With interests in Iraq, Kuwait, Saudi Arabia, Bahrein Island, and Qatar, they are beginning to tap these vast resources. Only a beginning has been made. Present daily production in American operations is running less than that of the state of Kansas.

Youngstown Oil Country Tubular Goods is playing a part in the drama of this modern Arabian Night Entertainment--just as it has done in every oil-producing state and every other oil-producing area of the world. Wherever men find oil and are faced with problems of transporting materials for many thousands of miles to produce it only the best is acceptable. There they also find the orange-banded pipe from Youngstown, dependable for every need.



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Youngstown is identified by the orange band or bands

The Week's News

JUNE crude demand will run about 4,670,000 barrels daily, approximately 44,000 barrels above May, with indications that current high levels will continue for some time to come, to be followed by gradual reduction which will make the average for the year about 4,600,000 barrels a day. Page 27.

Press British Loan—The administration is pressing hard for House approval of the British loan, warning that its failure will draw the lines for economic warfare and nullify all efforts to secure an Anglo-American petroleum agreement. A loan of $1,370,000,000 to France, consummated last week, is in a different category. Page 26.

Science Research Bill—The National Science Foundation legislation has had hearings before a House subcommittee where a blast by minority members of the Senate Military Affairs Committee declared provisions will make patents worthless. Page 28.

"Mother Hubbard" Suit—The next step in the Mother Hubbard suit is expected to be a request for another delay in filing answers to the government's petition so that negotiations for a consent decree can be continued. Page 26.

Strike Settlement—Settlement of the railroad and coal strikes has only partly cleared the way for another attempt at peak production of civilian goods. Many other wage controversies lie ahead and the major strikes have so depleted supplies of steel, copper, coal and other important materials that some time will be required to get the industrial wheels moving at a fast pace. Story below.

Oil Division Conflict—An impending clash of authority between Interior's new Oil and Gas Division and the State Department over foreign purchasing commissions is seen. Story below.

Seek South American Oil—Royalty oil from Colombia and Venezuela is being sought both for refining in the United States and in South America. Page 25.

Leasing Changes Approved—Changes in the federal leasing law as advocated by the oil industry have been approved by a Senate committee. Page 24.

Texas Pipe Line—Texas-New Mexico Pipe Line Company has announced plans whereby it will become the largest handler of Permian Basin crude oil. Page 27.

Funds for New Division—Further appropriations for the Department of Interior are being asked on account of the establishment of its new Oil and Gas Division. Page 25.

New API Dates—The meeting of API directors scheduled for last week in Fort Worth and cancelled because of the rail strike will be held June 25-26 in Dallas. Page 25.

Conflict Between State Department and New Oil Division Over Foreign Purchases

Many industry observers see an impending conflict of authority between the Interior Department's new Oil and Gas Division and the State Department concerning jurisdiction in foreign oil problems. The issue has been focused recently with the arrival in the United States of an increasing number of foreign purchasing commissions and the resulting bottleneck in orders.

Sweden is the most recent nation to indicate to Washington that it plans to buy all its oil imports in the name of the Swedish government. Previously, France and other countries, especially those handicapped with "blocked" dollars, have declared similar intentions. Certain U. S. government thinking, reportedly centering in the State Department, is to the effect that such foreign government-controlled buying requires the counterpart in this country of government-controlled selling. It is also reported that President Truman inclines to support the State Department view that whatever federal powers and authority are assumed by the government in the foreign oil picture, should be lodged in the State Department. This, in a sense, modifies the original concept of centralizing all governmental functions in the new Oil and Gas Division.

Dollar Exchange Pooled

The entire issue grows out of the continuing pressure for "loans" to more than a score of foreign nations depending on U. S. financial assistance in the rehabilitation of their industrial and commercial life. These "loans" are actually only letters of credit for the purchase of U. S. materials. As they have been allowed, negotiations have been opened between U. S. suppliers and foreign purchasers. But whereas formerly such foreign purchasers were typically private interests, now they are almost exclusively foreign governments. This is due to the fact that the dollar shortage around the world has prompted many nations to pool and "block" dollar exchange, authorizing only essential dollar purchases. This arrangement, in turn, has made the foreign government itself the actual purchasing agent for its nationals and their companies. Thus the numerous foreign purchasing commissions in this country at the present time have shifted their dealings from the level of individual buyer-and-seller relationship to that of top-level diplomacy.

Seized as Argument

There is no doubt but that there still persists in Washington a strong, if minority, feeling that the government must remain in the oil business. There has even been talks of the revival of the old Petroleum Reserves Corporation. However, this does not appear at all likely; rather the advocates of government-in-the-oil-business are building their new case around the obvious bottleneck in supplies and materials. They point out that much of the petroleum and oil field equipment orders are a fictitious backlog, built up to inflated proportions by multiple orders. Some government screening setup is needed, they argue, to comb out order duplications and permit U. S. suppliers to know exactly where they stand with all this mounting backlog.

It is expected that the clash between the State Department people and Secretary Krug's Oil and Gas Division will come to the fore after the appointment of the new Division director, paralleling the old feud of 1943 between the State Department and Secretary Ickes' Interior Department, at which time Ickes upset the applecart by grabbing the idea of PRC from the State Department and persuading President Roosevelt to place the new agency under the Department of the Interior.

Steel Leaders Pessimistic Despite Strike Settlement

With the railroad and coal strikes settled, industry is ready to make a fresh start, hopeful but not too optimistic that its labor troubles are over.

In some respects, however, the situation is worse than it was on V-J day, with most of the metal-using industries starting from scratch because of lack of steel, shorter supplies of lead and copper and deficiencies in many other materials. For the oil industry, this means a lag of many months in replenishing depleted inventories, and the effects of the coal strike may be felt for a long period in the slowly arriving supply of drilling equipment.

Spokesmen for the steel industry this week were pessimistic over the outlook for the future. They saw little relief for industry as a whole even though the major strikes are being settled, pointing out that the country is facing a wave of small strikes which will prove equally effective in slowing down output.

The chief result of these smaller disturbances will be a jam in supplies of component parts. Together with the

shortages in materials, this may add up to stoppages in many lines. The automobile industry, for instance, is facing a shortage of copper wire, as well as of upholstery wire, which may require the slowing down of assembly lines.

President Truman's late but effective action in stopping the rail strike has had repercussions politically as widespread as those industrially. It has created a definite cleavage in the Democratic party, with Republican leaders in Congress doing their best to add fuel to the fire. The Senate's refusal quickly to pass the emergency legislation asked by the President and immediately adopted by the House tied the Government's hands and made necessary longer negotiations for settlement of the coal strike, with consequent advantage to John L. Lewis.

Indicating that the labor picture still is far from clear, the Department of Labor is receiving notices of intent to strike at the rate of more than 150 a week and officials believe the number will mount to between 200 and 250 a week in the near future.

Since such notices must be filed at least 30 days in advance of a strike, this mounting volume indicates serious tie-ups later this summer, and it is generally believed that around August or September, when mounting prices caused by already-granted wage increases hit workers, there will be a new wave of difficulties.

Senate Committee Approves Important Changes in Federal Leasing Statute

A flat royalty rate of 12½ percent on leases of public lands not within a proven structure, with leases to be granted to the first applicant and non-renewable options for geological and geophysical examinations of prospective areas, to be limited to two years and an area of not more than 100,000 acres in any one state, are among the major revisions of the Leasing Act of 1920 provided in the Hatch-O'Mahoney bill as reported to the Senate last week.

The bill was approved by the Senate Public Lands Committee on the basis of hearings held in Denver and Casper, Wyo., last year and in Washington last month, and embodies the first major changes made in the leasing act since August, 1935. Designed to encourage the development of some 300,000 square miles of potential oil lands on the public domain, the bill advocates the present acreage limitation on one structure and doubles the amount of land that may be leased by any operator in any single state, fixing a limit of 15,300.60 acres.

A new section is added to the law, providing for the issuance of new leases for a term of five years and so long thereafter as oil or gas is produced in paying quantities, in exchange for the outstanding 2-year leases issued under the old permit system abolished by the 1935 legislation. Such leases are to be made at a royalty rate of not less than 12½ percent as to present production and at a flat 12½ percent as to discoveries of new deposits after the effective date of the bill. The royalty rate on leases where new discoveries were made after May 27, 1941, which were given a royalty rate of 12½ percent under the temporary legislation enacted in 1942, will continue at that rate.

All leases are subject to one renewal for five years, or to an extension for two years if diligent operations are in progress at the at the lease expiration date.

The bill also amends various provisions of the law to relieve the Interior Department of much administrative detail and save time and money for operators.

The bill is now on the Senate calendar and members of the committee are confident that it can be taken up and passed before adjournment in July, but there is some doubt whether the House will act with equal celerity.

The House committee, following the close of the Senate hearings last month, heard many of the same witnesses, but has not yet reported the legislation.

The bill, prepared by the Senate committee, met many of the objections raised by Interior Department officials to the original legislation. Since it is a matter of importance only to the public land states, whose delegations are anxious to have the leasing law reformed, it is not expected that its consideration in either house would involve any controversy. Accordingly, once brought up it is believed the bill will pass readily and, barring last minute opposition from Interior, will be approved by President Truman.

H. O. English, executive secretary, speaking for the Rocky Mountain Oil & Gas Association said that "the important thing now is for the Senate and House to pass this bill before adjournment so that operators can have the completed bill before making up their 1947 budgets for the Rocky Mountain region. Representatives of the industry "are convinced that such a bill will stimulate vast growth and development of oil in the public domain," he declared.

More Lead for Ethyl Fluid

A cutback in the lead allocation for the production of batteries made it possible for the Civilian Production Administration last week to allocate 4200 tons of metal for the production of ethyl fluid during June instead of the 3800 tons originally listed. The cutback in battery allocation came as a result of the determination that manufacturers' requests for the metal had been inflated.

The 4200 tons allocated for ethyl fluid will permit about the same production as during May.

Patent Roundup

A Regular Feature of THE OIL WEEKLY

Patents recently issued by the United States Patent Office at Washington, D. C., include those listed below.

Printed copies of the patents listed are furnished by the patent office for 10 cents per copy and can be had by addressing the Commissioner of Patents, Washington 25, D. C.

Pipe Line Repair Plug

This patent (No. 2,399,544) has been taken out by Harry S. Danner of Tamaqua, Pennsylvania, and is unassigned.

The plug, consisting of an elongated hollow center support, surrounded by spaced flexible annular flanges which guide it by the walls of the pipe line, it being free to travel through the pipe and sealed so as to be buoyant, is inserted in the pipe line at a distance and transported by the flow of pipe fluid to the break, where it prevents escape of fluid while pipe is being repaired or replaced.

Perforating Casings

A method of perforating well casings (No. 2,399,211) has been patented by Clyde O. Davis and Lawton A. Burrows of Woodbury, N. J., and assigned to E. I. Du Pont de Nemours & Company at Wilmington.

The method consists in lowering a charge of explosive into the well to approximately the depth where the perforation is required. The charge is hollowed on one side, bringing about the detonation and effecting perforation of the casing on the side adjacent to the hollowed portion of the charge.

Casing Head

This equipment (No. 2,400,254) has not been assigned by its inventor, Arthur J. Penick of Houston.

An inside seat of well head construction is fitted and sealed externally with a retainer having inwardly projecting keys, an annular ring which forms a seal with an inner pipe through the head. A slip bowl has vertical keyways which receive the keys and is movable against the seal ring. Slips in the bowl engage with the inner pipe.

Drilling Method and Fluid

Thomas S. Chapman, Chicago, has assigned to Standard Oil Development Company his patent (No. 604,084).

Gelatinized starchy material in a filtration reducing quantity is added to drilling mud of clays suspended in an aqueous medium and containing a water soluble salt whose flocculating effect on the clays increases an undesirably high filtration rate.

South American Royalty Oil Sought for Refining Both in U. S. and Venezuela

Four different American interests have opened negotiations wtih the Venezuelan government for the purchase of its royalty crude oil. One group seeks to import the oil into the United States while the other three are concerned only with an arrangement for the processing and marketing of petroleum within Venezuela itself.

The import plans have been developed by a group of East Coast independent marketers who have associated with them a number of Midwest independent refiners. The joint group has sent a note to the Venezuelan government asking the right to bid for the country's entire output of royalty oil. The American operators say they are interested in obtaining a 130,000-barrel a day volume, all of which would be laid down at the Gulf. There 30,000 barrels a day would be put through three refineries which the group has interested in the program (see page 13, THE OIL WEEKLY, May 6, 1946), and the remainder would constitute a crude supply for the Midwest refiners.

Co-op Refineries

The combined group has proposed acquisition of the Big Inch pipe line to move the oil from Gulf ports to the refineries. It is understood that some cooperative refineries in the Midwest are involved.

The other three groups seeking Venezuela oil for refining within Venezuela are reported to be Danciger Oil & Refining Company, of Tulsa; Tret-O-Lite Corporation of St. Louis, and David Feldman, independent Dallas producer, who is said to have negotiated a similar arrangement recently with Colombia. (See page 47, International Section.)

Natural Gasoline Shows Some Decline During March

Daily average production of natural gasoline and allied products dropped from 13,516,000 gallons in February to 12,632,000 gallons in March, the Bureau of Mines has reported. Output for the month was 391,584,000 gallons against 378,434,000 gallons in February.

March production included 196,959,000 gallons natural gasoline against 185,348,000 in February; 27,344,000 gallons natural gasoline mixture against 23,970,000; 30,571,000 gallons raw condensate against 34,015,000; 35,273,000 gallons commercial butane-propane mixture against 36,398,000; 29,667,000 gallons normal butane against 28,267,000; 22,625,000 gallons propane against 22,305,000; 9,817,000 gallons other mixtures against 11,307,000; 11,626,000 gallons iso-butane against 12,133,000; 3,319,000 gallons iso-pentane against 2,266,000; 20,322,000 gallons finished gasoline and naphtha against 18,595,000, and 4,061,000 gallons other products against 3,830,000.

Gasoline Consumption 1945 Jumps Up 3 Billion Gallons

Lifting of gasoline rationing after the defeat of Japan resulted in the consumption last year of nearly 3 billion gallons more of gasoline than would have been the case had wartime restrictions continued, the Public Roads Administration has announced.

On the basis of tax returns from the several states, PRA reported the 1945 motor fuel consumption as 19,339,492,000 gallons, compared with 16,610,651,000 gallons in 1944. The greatest increase in consumption, 32.8 percent, was recorded in New Mexico; the lowest, 11.2 percent, in North Dakota (the latter believed by PRA to be due to evasion of tax).

PRA found that there were 520,670 more machines on the road last year than in 1944, and that the number of privately owned automobiles and taxicabs was 198,193 greater, apparently due to cars being brought out of storage.

Total registrations were 30,606,859, against 30,086,189 in 1944, including 991 publicly owned vehicles against 393,4,830,458 trucks against 4,513,340; 396,117, and 25,664,524 private automobiles and taxicabs against 25,466,331.

Postponed API Directors Meeting Set for June 25

The deferred meeting of the board of directors of the American Petroleum Institute has been set by President William R. Boyd, Jr., for Dallas June 25-26.

Originally scheduled at Fort Worth May 28-29, the meeting was cancelled when the railroad strike was called. When arrangements were made for a new date, it was found that hotel facilities would not be available in that city during June, but that the Adolphus Hotel in Dallas could take care of the meeting.

Boyd has advised his directors that "the board will continue in session until the docket is cleared."

International Exposition Cancels 1947 Show

The Twelfth International Petroleum Exposition, originally scheduled to be held in Tulsa on May 17-24, 1947, was postponed until the spring of 1948 at a meeting of its executive committee in Tulsa on May 31.

The action was announced by Frank J. Hinderliter, who presided at the meeting. It was explained that the decision to postpone the exposition was taken because lack of construction materials, building restrictions, and shortage of housing indicated it would be impossible to take care of the demand for exhibiting space, which exceeded all expectations.

Ten Percent Increase on Certain Equipment Allowed

A 10 percent increase in maximum price on drilling and producing machinery and parts was authorized last week by OPA, to offset increase in labor and materials since 1941.

The problem of oil field equipment prices has been before OPA for some three months, and a number of conferences were held with the manufacturers. The actual order, however, was set back by strikes and it was not until the labor situation cleared up that OPA decided to issue it.

The increase will not extend to drill pipe, casing, engines or tanks, but will apply in the case of water drilling machines and equipment.

Oil field supply houses and other resellers will be permitted to increase their maximum prices the same percentage amount as their net invoiced cost has been increased as a result of OPA's action.

OPA, announcing the increase, said a further study to determine the need of another adjustment may be required later after additional data and figures have been obtained.

Funds Asked for Interior's New Oil and Gas Division

Operating and administrative cost of the Interior Department's new Oil and Gas Division during the year beginning July 1 is estimated at $472,000, and the Senate, now considering the department's appropriation bill for the coming fiscal year, has been asked by the President to provide $255,000 additional to the $472,000 provided by the House for the petroleum conservation division, which will be part of the new organization.

Initially, the Oil and Gas Division will have a staff of about 50 persons at the outset.

Kentucky Meeting

During the annual Mid-Year Meeting of the Kentucky Oil & Gas Association at Lexington, Kentucky, June 7 and 8, addresses will be delivered by Howard Marshall, Ashland Oil & Refining Company; Russell B. Brown, general counsel, Independent Petroleum Association of America; Major B. A. Hardey, president of IPAA, and Harold McClure, president of the National Stripper Well Association.

Dr. A. C. McFarlan, head of the geological department, University of Kentucky, will preside at a technical session on the morning of June 8. Papers will be presented by J. L. Rogers, Carter Oil Company, and D. J. Jones, Kentucky State geologist.

Louisiana Allowable

Louisiana's allowable for June has been set at 417,814 barrels daily by the State Conservation Department. This is up 10,639 barrels over the May allowable with the principal increases in the Lafitte and Monroe districts.

Believe Consent Decree Negotiation Continuing

Defendants in the government's "Mother Hubbard" suit are expected shortly to ask for another extension of time within which to file their replies with the Federal District Court in Washington. A consent-decree settlement is believed in the making.

Legal representatives of the companies recently conferred with Department of Justice officials for further exploration of the situation but, so far, no formal offers have been made by the companies, whose lawyers explain they are studying the "basic facts."

The present deadline for the filing of answers to the department's petition is June 20. The company committee is not expected to confer with department officials again until after an industry meeting scheduled for June 11.

Cotton Valley Case

The antitrust division's investigation into the situation in the Cotton Valley Field, Louisiana, involving activities of an unnamed group with respect to oil after it left the well-head but not relating directly to the unit plan under which the field is producing, has been completed and the results are being studied. Representatives of the group under inquiry have conferred with the department, and it is probable any offending practices will be eliminated.

Other oil investigations were based on a specific complaint involving fuel oil on the East Coast and complaints involving the well-drilling machinery producers. The East Coast situation is believed to have been cleared up, and the equipment inquiry produced no information to indicate violation of the antitrust laws on the part of the manufacturers.

Administration Plugging For British Loan Approval

With the best talent at its command arguing the necessity of the $3.75 billion loan to Britain, the administration is making a feverish drive to insure sufficient House support to make that body follow the lead of the Senate in approving the advance.

State Department and Treasury officials take the position that this credit is the foundation of the entire structure of economic and political international cooperation on which hinges the Anglo-American petroleum agreement, the elimination of artificial trade barriers and the freedom of United States nationals to operate in a large part of the world.

Failure of the loan, it is feared, will result in Britain's strengthening of existing bilateral trade agreements and their expansion to cover new areas, and reinforcement of the imperial preference system to encourage trade with nations willing to accept payments in blocked sterling.

A credit of $1.37 billion to France was arranged last week, but officials said it lies in a different category from the British loan, which calls for an advance of funds by this government.

Like the British loan, the aid to Frances is predicted upon her assurance that French tariffs will not be increased, that the prewar policy of import quotas designed to protect French producers will be abandoned, and that the French government will cooperate in the United Nation's program for the elimination of artificial trade barriers.

Scout and Landmen New Officers

New officers of the National Oil Scouts and Landmen's Association, which held its first postwar convention in Jackson, Miss., are shown above, left to right, as follows: H. J. Roberts, Gulf Oil Corporation, Houston, editor of the Yearbook; J. O. Phipps, Superior Oil Company, Evansville, Ind., secretary-treasurer; (standing) E. J. Raisch, executive secretary; S. S. Stinson, Humble Oil & Refining Company, Midland, Texas, president; Henry P. Evans, Skelly Oil Company, Wichita, Kan., second vice president. S. M. Jackson, The Sun Oil Company, Shreveport, La. was elected first vice president but did not attend the meeting.

Shell to Expand District Office at Lake Charles, La.

Shell Oil Company, Inc., is planning expansion of its Lake Charles, La., district office with a new two-story office building and addition of an exploration department.

E. N. van Duzee, division manager for South Louisiana, will continue to head the production department at Lake Charles, and C. L. Herold, district geologist, will be in charge of exploration. H. L. Ohliger will head the land-survey section and J. C. Skains will be transferred from Baton Rouge to Lake Charles as land agent. J. B. Dorr, S. R. Say and F. M. Loomis, geologists; J. F. West, J. M. Crosbie and L. A. Latta, paleontologists; F. L. LaLanne, draftsman, and L. C. Herwig, geophysicist, will be transferred from Houston to the exploration department at Lake Charles.

Stripper Subsidy Changes

Eight crude pools in five states were added to the stripper-well premium list by OPA last week, with subsidy increases to be effective from May 1 as follows:

Playa Del Ray (Venice Area) pool, California, 14 cents per barrel; Elbing, Kansas, nine cents; Greenwich, Kansas, 35 cents; Lost Springs, Kansas, 20 cents; Polkton, Michigan, 35 cents; Chandler, Oklahoma, one cent; Moore, Oklahoma, four cents, and Talco, Texas, 14 cents.

OPA also announced that the Seminole East Pool, Oklahoma, previously granted a subsidy, has been redesignated to exclude the Booch Sand, and the Cayuga Pool, Texas, also given a subsidy, has been redesignated to include that part of the pool that extends into Anderson and Henderson counties.

Foreign Oil Bulletin Planned

The Department of Commerce is attempting to obtain a greater flow of information from foreign countries on developments in oil and other commodities and is seeking a directive from the Secretary of State requiring foreign officers to report promptly and fully.

Since the end of the war, Commerce officials have been trying to improve their service and the various commodity divisions have been materially expanded. The department, however, is dependent upon the State Department's foreign service for its representation abroad, and its reporting since the end of the war has been anything but satisfactory.

Once a steady, reliable flow of information is developed, Commerce officials in charge of oil matters have in mind the frequent publication of a bulletin devoted to foreign oil matters, possibly starting before the end of the summer.

Texas-New Mexico Plans Feeders and Trunk Line from West Texas to Gulf

Texas-New Mexico Pipe Line Company has placed orders for the construction of a 16-inch trunk line from its West Texas terminal near Crane, Crane County, via Houston and Sour Lake to Port Arthur. The line will parallel a 12-inch carrier operated since 1929 from Crane to Houston, and when completed next year will afford the company a capacity of 140,000 barrels daily, with the smaller unit eventually handling sweet oil exclusively. The project also calls for the installation of an extensive feeder system that will make available the bulk of the Permian Basin oil controlled by the four companies that own the carrier.

The Texas Company and Sinclair Refining Company are reported studying plans for the construction of products (gasoline) pipe lines from their gulf coast refineries inland. The Texas Company's line would be north from the Port Arthur refinery while Sinclair Company's carrier would be from their plant at Corpus Christi north to San Antonio and Austin.

Humble Oil & Refining Company now is constructing a products line from the Baytown refinery to a terminal between Fort Worth and Dallas.

Adequate crude reserves are available in the Permian Basin to assure a capacity load for the line for a long period of years and the owners propose to utilize their respective shares of the enlarged capacity in filling expanded crude requirements.

Construction of this 16-inch and supplemental lines by other carriers serving the Permian Basin is a necessity if the deep fields uncovered within the past few years are to be developed. This basin has been the largest contributor to the nation's reserves of sweet crudes for several years, and has the greatest backlog of proved undrilled locations. Pipe line capacity has not been expanded in proportion. Preference on the part of the buyers for sweet crude has caused rigid curtailment of the regular Permian sour oil. The bulk of the sweet crude is found below the 6700-foot level, and high allowables are imperative to warrant development.

Becomes Largest Carrier

An expenditure of more than $15 million will be made by the company in becoming the largest carrier of Permian Basin crude. The parallel 16-inch from Crane to Houston will require 471 miles of pipe, while the new unit from Houston via Sour Lake to Port Arthur calls for 101 miles of 16-inch. The latter will permit direct movement of oil to The Texas Company's main refinery at Port Arthur, while the Sour Lake routing is to make substantial deliveries into the Empire Pipe Line Company's system that supplies the Cities Service Refining Corporation's refinery at Lake Charles, La.

An extensive feeder system will be built in the Permian Basin. The first unit will involve the laying of 35 miles of 12-inch loops between Crane and Jal, N.M. This sector now consists of the original 10-inch, and two 12-inch loops, aggregating 40 miles, were added in 1937 to provide a capacity of 60,000 barrels daily. Provisions have been made for the later construction of additional lateral lines off the Crane-Jal unit. The company operates a combination 8-inch and 10-inch trunk line from the upper portion of the West Texas district, starting in the Slaughter field, and terminates at Midland, where deliveries are made to other carriers. This line also serves the Welch, Cedar Lake and Mabee fields. About 50 miles of line would be required to extend from Midland to Crane and tie into the main system, but this extension is not included in the initial program of expansion.

The 16-inch line will have a rated capacity of 100,000 barrels daily, using four booster stations at Crane, Ozona, Junction and Rasanky, these to be equipped with diesel-powered reciprocating pumps. Some of the station equipment now serving the 12-inch carrier will be tied into the 16-inch, thereby lowering the capacity of the smaller unit from 65,000 to 40,000 barrels daily.

Pipe will not be available until late in 1946, and possibly later. Construction will begin early next year.

The Texas Company owns 45 percent interest in The Texas-New Mexico Pipe Line Company, while Sinclair Prairie Oil Company has 35 percent. Cities Service and Tide Water Associated Oil Company each has 10 percent.

Crude Oil Production in the United States

(Estimates compiled by the OIL WEEKLY. All figures indicate daily averages in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED June 1	May 25
Alabama	1,100	1,100
Arkansas	72,900	72,500
California	864,300	867,300
Colorado	29,000	28,800
Florida	250	250
Illinois	211,800	209,600
Indiana	19,300	19,500
Kansas	254,500	270,150
Kentucky	30,900	30,900
Louisiana	371,350	370,100
North Louisiana	79,900	78,650
South Louisiana	291,450	291,450
Michigan	48,000	46,150
Mississippi	64,950	63,150
Missouri	100	100
Montana	19,500	19,700
Nebraska	750	750
New Mexico	95,800	95,300
New York	13,400	13,400
Ohio	8,100	5,750
Oklahoma	378,750	373,900
Pennsylvania	37,000	38,300
Tennessee	35	35
Texas	2,114,800	2,114,800
Upper Gulf Coast	486,000	486,000
East Texas Field	388,800	388,800
Rest of Eastern Texas	139,600	139,600
Southwest Texas	331,500	331,500
West Texas	521,100	521,100
North Texas	164,800	164,800
Panhandle	83,000	83,000
West Virginia	7,800	7,900
Wyoming	115,500	112,950
Total United States	4,759,885	4,762,385

44,000-Barrel Daily Gain To Be Shown by Estimates

The Bureau of Mines this week will issue its monthly forecast, predicting a daily average demand for crude in June of approximately 4,670,000 barrels daily, or about 44,000 barrels above May. Requirements for Texas crude are practically unchanged from the May level of 2,050,000 barrels, the increase being made up from the seasonal expansion of output in other areas.

A survey of the situation for all of 1946 will estimate the average crude production for the year at 4,600,000 barrels daily, with declines in the late months offsetting the higher output of the first two quarters and part of the third quarter.

The long-range survey will show a somewhat lower finished gasoline inventory likely at the close of the year than was held at the beginning of 1946 and possibly a better situation in distillate fuel oil, but just what the position of residual fuel will be will apparently depend on price, since it is not figured that the refiners can increase their yield much if any above the present 26-plus percent.

Results of the steel and coal strikes have been shown in the building up of stocks, but inventories of heavy fuel have improved only moderately as a result of the slowing down of the export coal movement, which reduced bunker demand, and industrial curtailment. However, the Navy, which was unable to fill its requirements in the first quarter, is believed to be getting all the special fuel it now needs.

Prices are seen as the dominating factor in the outlook for expanded use of the fuel and reconversions from coal, since at present yields not enough could be produced to meet those requirements and there is some question what the position will be with respect to normal demands toward the end of the year if inventories are not increased more rapidly than is indicated.

Geophysics Course

The University of Houston is commencing a night summer course entitled "Geophysics for the Geologist." It will be broad and inclusive in regard to general geophysical methods and geologic interpretation. Classes will be held twice weekly, on Monday and Wednesday, from 6 to 8:30 p.m.

Those interested should join the studies by June 10. Anyone of adult standing will be enrolled, although first-year understanding of mathematics, physics and geology is desirable.

Minority Report Attacks New Patent Plan; State Socialism Is Charged

Protection of private patents and patent contracts is the major issue in legislation creating a national science foundation, it was developed last week as, on the eve of hearings on the measure by a House Military Affairs subcommittee, dissenting members of the Senate Military Affairs Committee attacked the patent provisions recommended in April by the majority.

The minority report charged that the bill contains basic reforms in the patent laws which are in conflict with the purpose of the constitution and tend to eliminate the private patent system.

"The patent provisions of the bill require the administrator, or the head of any government agency to insure that all patent rights which result from federally financed research shall be in the possession of the federal government and discoveries given to the public," it declared. "The theory that the inventor's exclusive right to his discovery shall be protected by patent and he be thus given an incentive to promote the progress of science and useful arts would be destroyed."

It was also pointed out that the bill makes no distinction between developments entirely financed by the government and those to which the government might contribute only a little. Thus, it was explained, if a university desirous of undertaking certain research costing $500,000, gets a federal grant of $100,000, a state grant in equal amount and induces a manufacturing firm to finance the remaining $300,000, the government might so write its contract as to cover all inventions arising out of the entire $500,000 project. Few industrial concerns likely would care to finance research on this basis.

The minority also challenged the contention that free dedication to the public will mean the introduction and fullest use of inventions developed under the bill, taking the position that no corporation would care to invest capital to develop such patents, when its competitors can have all the information and be free to begin manufacturing without development cost when the demand is proved.

"This section, in effect, abrogates all existing patent laws not by abolishing patents but by rendering the patent worthless," it was argued.

Estimates of the cost of the program call for between $100 and $200 million the first year to be sure of sufficient funds for long-range projects, and the bill provides that, if unexpended, funds are to be carried over for four years, so that the foundation might have nearly $800 million in current research projects after four or five years.

The total federal research expenditure in 1940 was $70 million, and in 1944, at the height of the war, $700 million.

"The significance of these figures is in the shifting of emphasis in research from private to government laboratories—the planned regulation of state socialism," the report said.

Rubber Plant Offered

A completely equipped synthetic rubber plant, operated during the war in Louisville, Ky., by The B. F. Goodrich Chemical Company, was offered for sale or lease by the War Assets Administration May 31.

AIME Head on Southwestern Swing

An enthusiastic welcome was extended in Houston last week by the Gulf Coast Section of AIME to the Institute's new president, Louis S. Cates, also president of Phelps Dodge Corporation, New York, and to A. B. Parsons, secretary of the engineering organization. Seated, left to right: Cates, Mercer H. Parks, chairman of the Gulf Coast Section; John R. Suman, vice president of Standard Oil Company (New Jersey) and a director of the Institute, and William H. Strang, Tulsa, secretary of the Petroleum Division of AIME.

On his tour Cates is asking for repeal of the Wagner act, declaring for "reasonably simple tax laws" with exploration, development and research treated as necessary business expense, and advocating "adequate tariff protection for mining and minerals."

Thompson Files Brief Favoring Gas Exportation

Ernest O. Thomposn, member of the Texas Railroad Commission, has filed an amicus curiae brief with the Federal Power Commission in the case of Reynosa Pipe Line Company's application to export Texas gas to Mexico.

Thompson in filing the brief desired to present his reasons for dissenting from the action taken by Commissioners Olin Culberson and Beauford Jester who objected to approval of Reynosa's application.

The brief, filed in the nature of an argument, has been received and read by the FPC which has the case under advisement and probably will hand down a decision within the next few weeks.

"After reviewing the record of the evidence submitted to you at the three hearings held in this matter, I am convinced that the (Texas) Railroad Commission should not protest the application and that the proposed exportation will be consistent with the public interest," the Thompson brief states.

Reasons cited in the brief for favoring the application include: a state regulatory agency can speak for and represent the people of their state only within the limitations of their authority; the exportation of natural gas to Mexico, as applied for in the proceedings, will be in furtherance of the foreign policy of the United States; the encouragement of competitive pipe line facilities and new markets for natural gas promotes conservation and therefore is in the public interest; the purposes for which the gas is to be used would not be unlawful and would not constitute "waste" under the Texas statutes; there is no present or foreseeable need in the United States for the natural gas sought to be exported to Mexico.

Thompson said FPC is required by the Natural Gas Act to issue an order authorizing the exportation sought in this proceeding, unless it finds that the proposed exportation will not be "consistent with the public interest."

"That phrase does not connote a public benefit to be derived or suggest the idea of a promotion of the public interest," Thompson cited. "The thought conveyed is merely one of compatibility. If the proposed exportation will be 'compatible' with the public interest, it should be authorized."

Dual Completion Plea Made to Rail Commission

The Texas Railroad Commission has reset for June 11 the rehearing on the application of Superior Oil Company to complete dually one of its wells in the Sugar Valley field, Matagorda County, Texas. The application was denied once but Superior has entered a motion insisting the Commission had no authority to deny the application when separation of the zones was proven and there was no evidence the operation could not be conducted successfully. The well would produce gas from one zone and oil from another.

By GORDON B. NICHOLSON, Staff Writer

Airborne Magnetometer

EXPEDITES GEOPHYSICAL SURVEYS

Instrument developed for wartime detection of submarines now may find an application in the peacetime search for oil structures.

AN AIRBORNE magnetometer, developed for submarine detection as a wartime expedient, now gives promise in its application to geophysical prospecting in locating magnetic anomalies which may indicate the presence of certain mineral deposits and structures favorable for the accumulation of oil. Similar to the standard magnetometer in basic function, its adaptation for use in aerial surveys expands its scope and enhances the dependability and accuracy of magnetic readings.

Now emerging from the secrecy which enshrouded its development during the war, the device is revealed as a highly sensitive instrument capable of recording magnetic anomalies of intensities as low as one gamma. Airborne magnetometers were developed jointly by the Naval Ordnance Laboratory and the Bell Telephone Laboratories, under the auspices of Navy's Bureau of Ordnance and Bureau of Aeronautics; by Gulf Research and Development Company, working independently and later under contract with National Defense Research Committee; and by Columbia University Division of War Research through its Airborne Instruments Laboratory, also under contract with N. D. R. C. This article deals with the development of the airborne magnetometer by the Naval Ordnance Laboratory and the Bell Telephone Laboratories, and with experimental research by these two groups and the United States Geological Survey to apply it to peacetime pursuits, with adaptation to aerial utility attained through the cooperation of the Bureau of Aeronautics. Many later surveys and development work were undertaken with the cooperation of the Office of Naval Petroleum Reserves.

Earlier use of the airborne magnetometer was hampered by non-sensitivity of available instruments, which prevented detection of low-scale anomalies. Adequate sensitivity was finally attained with the use of field-sensitive fluxgates for detecting magnetic objects, and the magnetic airborne detector currently in use consists of a continuously recording electronic instrument and a continuous strip camera which records the position of the airplane and keys the magnetic profile to the ground position.

Trial and Error

The present airborne magnetometer is the result of the trial and abandonment of numerous ideas and methods, and its practical application is the evolution of many changes in technique designed to achieve the optimum results. In addition to the development of a sensitive instrument, many operational difficulties were overcome before efficient tabulations were possible. Among these were development of suitable housing for the instrument in flight to assure immunity from local magnetic influences within the housing and the airplane; perfection of apparatus within the airplane for recording the magnetic readings obtained; and, of paramount importance, a system for correlating magnetic readings with ground position, which included allowances made for wind and varying airspeed of the plane, as well as the direction in which the plane was headed during the numerous traverses made over an area.

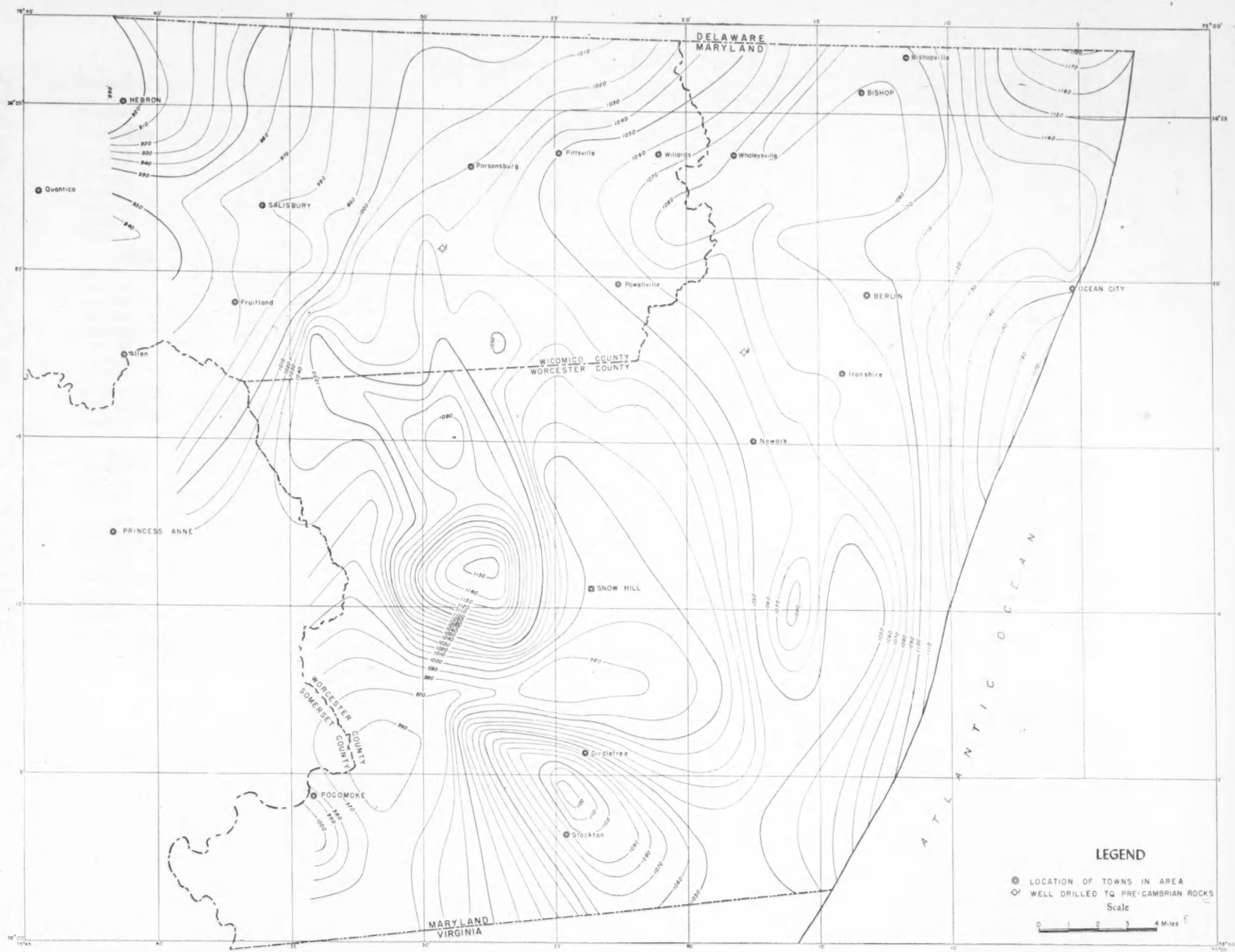
The magnetic airborne detector used by the Geological Survey is trailed on an electric tow cable behind a twin-engine airplane. The fluxgate detector unit is mounted in a bomb-shaped plywood container or "bird" about six feet long, free of magnetic materials, streamlined and bearing guiding fins on the tail to reduce oscillation flight. Cables of varying lengths have been tried,

Official Photograph U. S. Navy

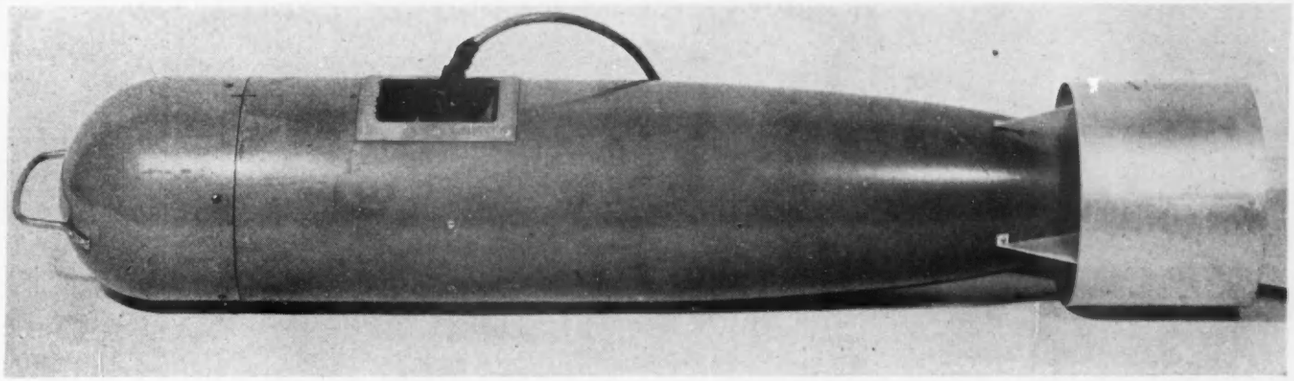
The "bird" containing the airborne magnetometer is towed behind an airplane by means of an electric cable to eliminate magnetic influences. Twin-engine planes are usually used as a safety feature due to low-altitude flying, with the Navy Catalina being a favorite for work of this nature.

Compilation of data obtained from readings of the airborne magnetometer includes preparation of magnetic maps of the area surveyed. Illustration shows a map of Worcester County and part of Wicomico County, Maryland, listing anomilies in total magnetic intensity. Lines represent isogams, or points of equal magnetic intensity, and the "highs" stand out prominently.

Map prepared by United States Geological Survey in cooperation with the Office of Naval Petroleum and Oil Shale Reserves.



Anomalies in total magnetic intensity corrected for idealized magnetic latitude variation, —6 gammas per mile to the north, +4½ gammas per mile to the east.
INTERVAL BETWEEN LINES 10 GAMMAS



A "bird" is a bomb-shaped, streamlined housing made of non-magnetic materials and provided with fins to reduce oscillation in flight. A continuously recording electronic instrument indicates magnetic anomalies, While a continuous strip camera indicates position of the airplane and keys the magnetic profile to the ground position. Official Photograph U. S. Navy

the one adopted being about 100 feet long. The extensive surveys conducted by the Navy have used a Catalina for performing the aerial flights, eliminating the use of the cable and the "bird" by removal of all magnetic materials from the tail of the airplane, with the airborne detecting unit mounted in a special extension from the tail section.

As magnetic influence of local anomalies on the fluxgate detector unit decreases conspicuously with higher altitudes, a radio altimeter became a vital part of the plane equipment, giving constant readings of absolute altitude over the terrain. A recommendation has been made for the use of two "birds" over areas where traverses are made at more than a single altitude. Two detectors supported by cables of different lengths will provide simultaneous readings over identical land section at two altitudes of known difference, giving an accuracy which could not be obtained by using a single unit making two separate traverses over the region.

Equipment within the cabin of the airplane has changed as a result of recommendations made during the course of experimental activities, particularly the apparatus pertaining to locating the ground areas where readings are obtained. Key instrument is a recording milliammeter which provides continuous tape on which is inscribed in ink by a stylus the intensity of the magnetic variation of the areas over which the plane passes. An intricate 35 millimeter camera, adjustable to conform with frequently-changing flight conditions including ground speed, drift, and altitude, photographs continuously to provide an unbroken visual reference to the ground underneath the traverses, and is adapted for correlating the location of principal landmarks with the readings on the milliammeter tape. Ground positions of magnetic anomalies obvious on the tape are easily located by referring to the photographic record.

Engineers of the Naval Ordnance Laboratory and United States Geological Survey designed an ingenious device for calibrating the readings obtained from the milliammeter tape, transferring them to a graph and changing the readings to a common scale. From the graph, draftsmen are enabled to prepare contour maps of a region, the contour lines representing isograms, or points of equal magnetic intensity. Obvious on the contour maps are the high and low areas representing differences in magnetic intensity, with the magnetic highs showing presence of concentrated magnetite, or possible subsurface elevations or faults in the relatively magnetic Pre-Cambrian basement rocks.

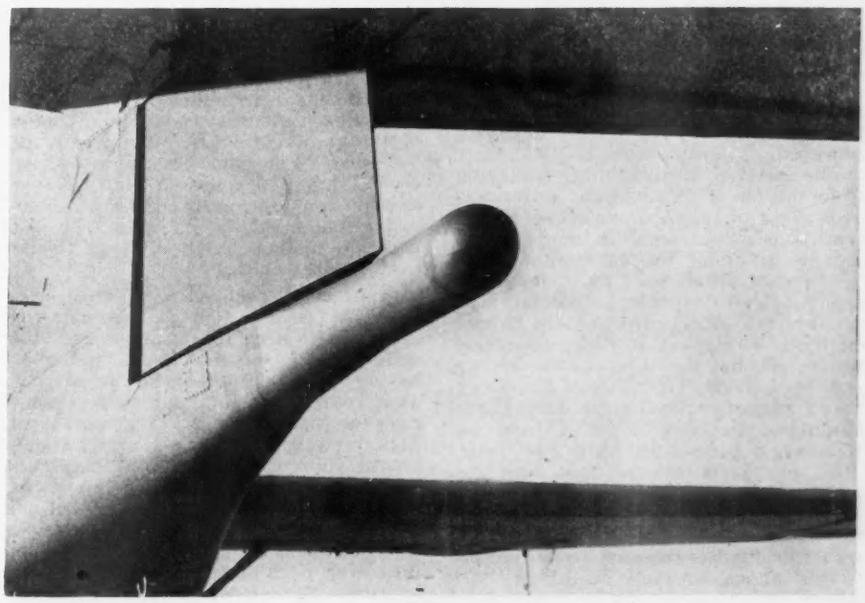
Many Tests Made

Under the auspices of both the Navy and the Geological Survey, numerous test flights with the airborne magnetic detector were conducted, with the initial flights being performed in the vicinity of Boyertown, Pa., over a region of known geological structure, with the purpose being to correlate data obtained from the air and ground, and to form basis for an estimate of the usefulness of the airborne magnetometer in geophysical work. The results were sufficiently satisfactory to justify further development of instruments and methods employed for this type survey, and subsequent tests were made by the Navy and the Geological Survey over terrain of divergent natures.

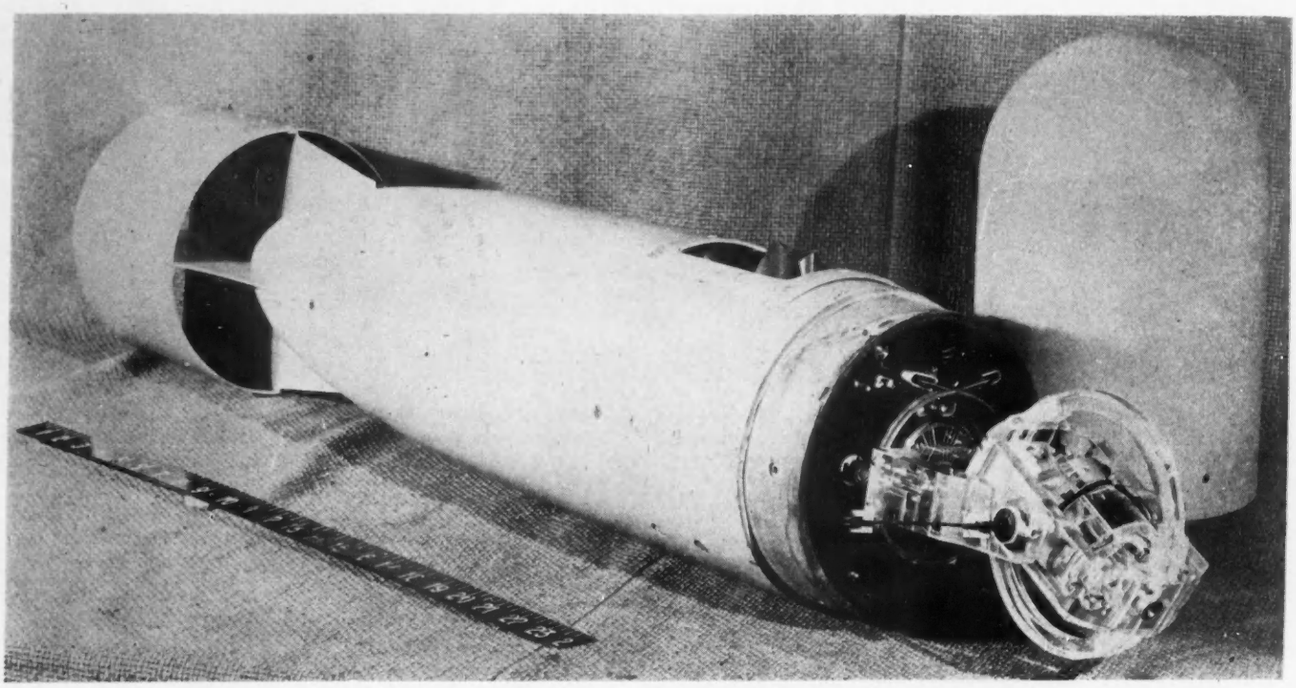
The second survey encompassed some 1500 square miles of Iron County, Michigan, and was designed to map location of probable iron ore deposits in an area where the mineral was known to be present. Later tests utilized the airborne magnetometer over oil lands of Oklahoma, the Big Horn Basin of Wyoming, and in widely dispersed sections of Maryland, the Adirondacks, and Alaska. Tests are currently being made over the continental shelf regions of the Louisiana and Texas Gulf Coast.

As all past and current tests of the airborne magnetometer were planned primarily to determine the practicability of the instrument and to adopt recommendations made for its perfection during the course of the tests, gradually the instrumentation and techniques employed are assuming a pattern based on conclusions reached during the experimental stage. Traverses have been made at altitudes ranging from 300 feet above the terrain to as high as 14,000 feet, and spaced at varying horizontal distances. While still subject to alterations based on results of further knowledge of the subject, certain practices now are regarded as standard in obtaining highest efficiency.

With relatively insignificant changes in altitude, the intensity of magnetic reactions varies noticeably, although the general pattern remains substantially the same. The adopted standard altitude for obtaining readings is 1000 feet above the



The airborne magnetometer is often carried in an extension of the tail section after removal of all magnetic materials from the tail of the plane, making the "bird" and tow cable unnecessary. Official Photograph U. S. Navy



The "bird" containing an airborne magnetometer is oriented in flight by means of an intricate gimbal mechanism which is seen when the nose is removed. Magnetic anomalies of intensities as low as one gamma are detected by the magnetometer.

Official Photograph U. S. Navy

terrain, at which height immunity from local magnetic diversions is attained, including the influence of pipe lines, railroads, and transmission lines. At this altitude some detail of the magnetic picture is lost, but compensation is received by increased safety and ease of flying, and readings form a basis for additional surveys at lower altitudes over areas indicated.

Horizontal spacing of traverses varies with the type terrain over which the surveys are run, and range from ¼ mile in areas of concentrated intensity to three miles over regions of normal magnetic readings. Traverses are flown in parallel courses over the ground, and extend distances up to 30 miles in length. Surveys over an area are limited generally only by the speed of the airplane, although speeds of about 100 to 150 miles per hour are considered normal and desirable. Thus, during a seven-hour period, 700-1000 linear miles are surveyed.

The speed of magnetometer surveying from the air is of particular advantage over areas of rough or inaccessible terrain such as is found in mountainous regions or under the submerged areas of the continental shelf. A striking example of contrasting speed of airborne geophysical surveying over ground methods is shown in the exploration conducted by the Geological Survey and the Naval Ordnance Laboratory over a rugged section of the Adirondack Mountains in New York. During an eight-week period, in May and June, 1945, physicists of the two activities with an airborne magnetometer explored 3170 square miles of this mountainous region, flying a total of 11,300 miles, with traverse lines spaced at ¼-mile intervals at an average height of 1000 feet.

Cost of an equivalent ground reconnaissance survey using a dip needle is estimated to be 17 times as much as the cost from the air, and the time involved using a standard operating crew of four men would have required 27 full field seasons, or about 150 times the total elapsed time.

The Adirondack aerial operation was followed by extensive ground reconnaissance over the areas where magnetic anomalies were indicated, with the result that ten heretofore unreported anomalties were located, marking the location of magnetite deposits and thus the probable existence of commercial iron ore. Some other anomalies observed during the airborne survey but not yet investigated on the ground, may reflect still other new deposits of magnetite.

Continental Shelf Use

Another practical application for the airborne magnetometer is evidenced in the extensive survey now being made of the continental shelf regions of the Texas and Louisiana Gulf Coast where several hundred miles of Gulf submarine terrain are surveyed daily for locating magnetic anomalies in contrast with the tedious method of surveying from surface ships.

Continental shelf exploration presented a difficulty in determining the exact position of the airplane over the water, which was finally accomplished by use of Shoran or short range radio navigation, providing sufficient exactitude for practical purposes. Accuracy of Shoran navigation was previously tested on the shoreward side of the transmitting towers over section lines and canals of known position and within visual range of the transmitters on the beach. Tests showed a negligible error in determining position, with a range of plus or minus 100 feet due to the movement of the airplane.

Although certain disadvantages lessen the obvious benefits realized by use of the airborne magnetometer, development of the instrument looms as a definite advancement in the field of geological exploration. Of foremost interest is the speed attained in collecting data, which, in addition to expediting the receipt of desired geophysical information, lowers the cost of the prospecting on both a per-mile and a man-hour basis.

Significance of the data obtained is broadened by the continuity of the recorded survey, which graphically records the magnetic field continuously along the traverse rather than at a few points along the earth's surface as in a point-to-point ground survey. Reliability of the aerial readings is aided by eliminating the influence of local magnetic materials which sometimes cause incorrect interpretations. In addition, the continuity and rapidity of obtaining readings compensate for inaccuracies which result from diurnal variations and the instrument drift caused by variations in batteries, resistors, and electronic units.

The airborne magnetic detector unit is easy to install and operate, although its weight of approximately 350 pounds probably forestalls its use in light airplanes. The unit now being used by the Navy and the Geological Survey has a fine record for dependability, with few breakdowns being experienced despite its inherent delicateness and high sensitivity.

Speed, economy, and overall dependability of the airborne magnetometer combine to make its use advantageous in conducting preliminary reconnaissance surveys of areas as a guide for further investigation with other types of geophysical devices. Already tested as a surveying instrument over magnetic anomalies of widely varying magnitude and intensity, the magnetic airborne detector supplies accurate and consistent information which is highly detailed and closely related to the geologic structure of the regions being explored.

Mathematics of Cementing

AND OTHER PROBLEMS

Part 2

By ROY E. EDWARDS
Halliburton Oil Well Cementing Company

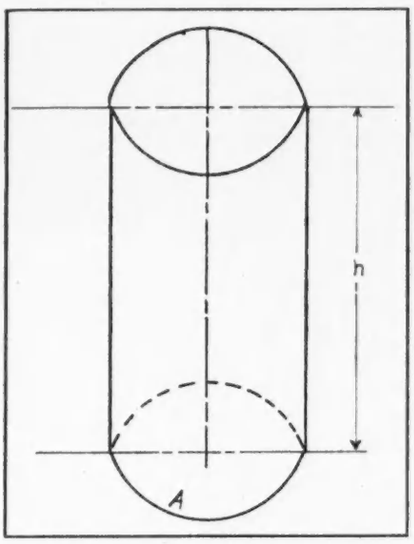


FIGURE 1

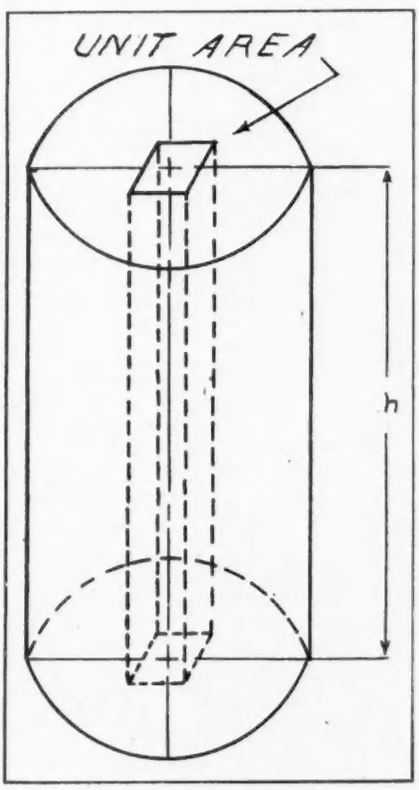


FIGURE 2

As POINTED out in the previous article, the writer feels that a "refresher" course in certain fundamental principles of mathematics and engineering will enable the average field man to solve many problems which confront him constantly and thus render more efficient service. They are being presented as briefly as possible and in such a manner as to allow rapid assimilation and application. The utility of mathematics has been explained and empirical examples cited in determining areas and volumes. Mass, volume and density will now be discussed.

Since the volume of a body is equal to the number of cubic inches or cubic feet which it contains and the density is defined as the weight per unit of volume, or the number of pounds in one cubic foot or cubic inch, the total weight of a given body must be equal to the product of the volume of the body multiplied by its density. For example, the density of iron is 490 pounds per cubic foot so it follows that two cubic feet would weigh 980 pounds.

Expressing in terms of letters:
$W = DV$
W = total weight
D = density
V = volume

Density may also be expressed in pounds per gallon. If we know any two of the above factors we may solve for the third.

Distinction Between Density and Specific Gravity

The term specific gravity is used to denote the ratio between the weight of a body and the weight of an equal volume of water. Thus, if a gallon of mud weighs ten pounds and a gallon of water weighs 8.33 pounds, the specific gravity of the mud is 10 divided by 8.33 or 1.2. In other terms, specific gravity expresses how many times heavier a given body of solid or fluid is than the same volume of water.

The following examples will illustrate the rule:

(1) What is the density of a gallon of mud, weight 9.5 pounds?

Solution:
$W = 9.5$
$V = 1$ gallon
$D = ?$
$D = W/V = 9.5/1 = 9.5$ lbs./gal.

(2) Find the density of, weight per gallon, a mud having a specific gravity of 1.5.

Solution: Weight of one gallon of water 8.33 pounds. Hence, $8.33 \times 1.5 = 12.4$ lbs./gal.

Pressure in Liquids

Experience has taught that the greater the weight of a body the greater the force required to support the body or to move it. In fact, the force is commonly taken as numerically equal to the weight of the body lifted or supported. This is called the weight measure of a force. A push or pull which is equal to that required to support a pound of weight is called a pound force.

Careful measurements and experiments in the laboratory will show the force proportional to the depth, or that the force increases as the depth increases.

In any liquid, at any given depth, a liquid presses up and down and sidewise on a given surface with exactly the same force.

If a vessel like that shown in Figure

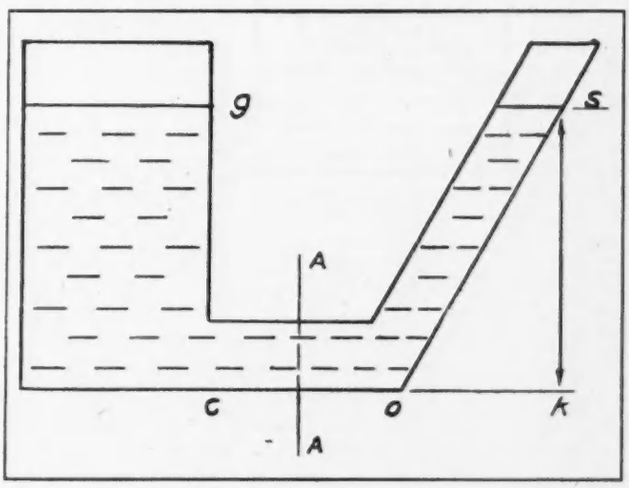


FIGURE 3

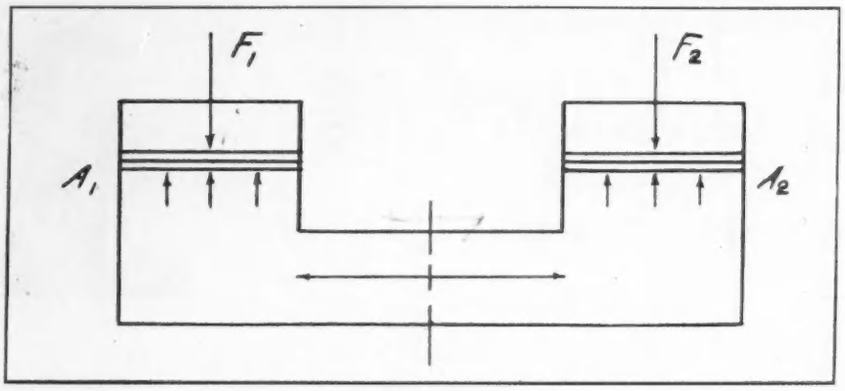


FIGURE 4

l is filled with a liquid, the force against the bottom is obviously equal to the weight of the column of liquid resting on the bottom. Thus, if (F) represents this force in pounds, (A) the area in square inches and (d) the density in pounds per cubic foot we have (1) $F = AHd$ (note AH = volume). Since the force is the same in all directions at a given depth, we have the following general rule:

'The force which a liquid exerts against any surface is equal to the area of the surface multiplied by the average depth of the liquid multiplied by the density of the liquid.'

It is important to remember that the average depth means the vertical distance from the level of the free surface to the center of the area in question.

Thus far, attention has been confined to the total force exerted by a liquid against the entire surface. It is often more convenient to consider the surface divided into square inches or square feet and consider the force on one of these units of area. When we speak of so many pounds pressure we mean the force per unit of area. (Figure 2).

Pressure is thus a measure of the intensity of the force acting on a surface and does not depend at all on the total area of the surface since $F = AHd$, and by definition the pressure (p) is equal to the force per unit of area. Hence, $p = F/A = \frac{AHd}{A} = Hd$. In words, the pressure at a depth of H below the surface of a liquid of d pounds per cubic inch is equal to Hd pounds per square inch.

Let us apply this to an erroneous idea prevalent among some "old timers" in the field who believe that the larger diameter the hole drilled a greater gas pressure can be held down. Obviously, this is a mistaken belief as will be noted in the above equation since the intensity of the pressure (force per unit of area) is entirely independent of the total cross sectional area of the hole.

If a liquid is poured into a vessel with several connecting tubes or vessels the liquid levels will be the same in the same plane in all vessels (Figure 3). As shown in this diagram the pressure at (c) is equal to the density of the fluid times the fluid times the height (cg), or p equals d x cg, also at (o) the pressure is equal to d x sk or p equal to d x sk. According to the fundamental law of mechanics, for every reaction there is an equal and opposite reaction. Hence at (AA) the pressures must be equal. Then $p = d \times cg = d \times sk$. If more fluid were poured into the vessel the fluid levels would equalize and the foregoing would still hold true. Thus, it can be seen that the pressures beneath the surface of a liquid depends simply on the vertical height or depth beneath the surface of a liquid, and the density, and is independent of the shape of the container.

We can make the following observations:

(1) Pressure varies uniformly with the depth of liquid; (2) Within a mass of liquid the pressure increases with descent and decreases with ascent of depth. A fundamental law rules that pressure if exerted upon a body of liquid is transmitted undiminished in all directions, acts with the same force on all equal surfaces, acts in a direction at right angles to those surfaces.

This fundamental law is applied in the construction of hydraulic jacks and similar devices for the multiplication of forces by hydraulic pressure (Figure 4).

$F_1 = pA1$ and $F_2 = p\ A_2$

Hence $F_2/F_1 = pA_2/pA1 = A_2/A_1$ And $F_2 = \frac{F_1 A_2}{A_1}$

Where F_1 and F_2 are the forces and A_1 and A_2 are the areas of the pistons.

Pressure Head

Reversing the equation $p = Hd$ we get $H = p/d$ or Height $\frac{\text{pressure}}{\text{density}}$

In Figure 5 if an open water column is induced by connecting a riser pipe at (b) the water will rise in it to the reservoir level when flow ceases and equilibruim is established. It frequently occurs in problems involving pressure that the "head" or height equivalent to the pressure is required. This height (p/d) that would result from (or that is necessary to cause) a certain liquid pressure (p) is called the pressure head or simply the head of the liquid under pressure.

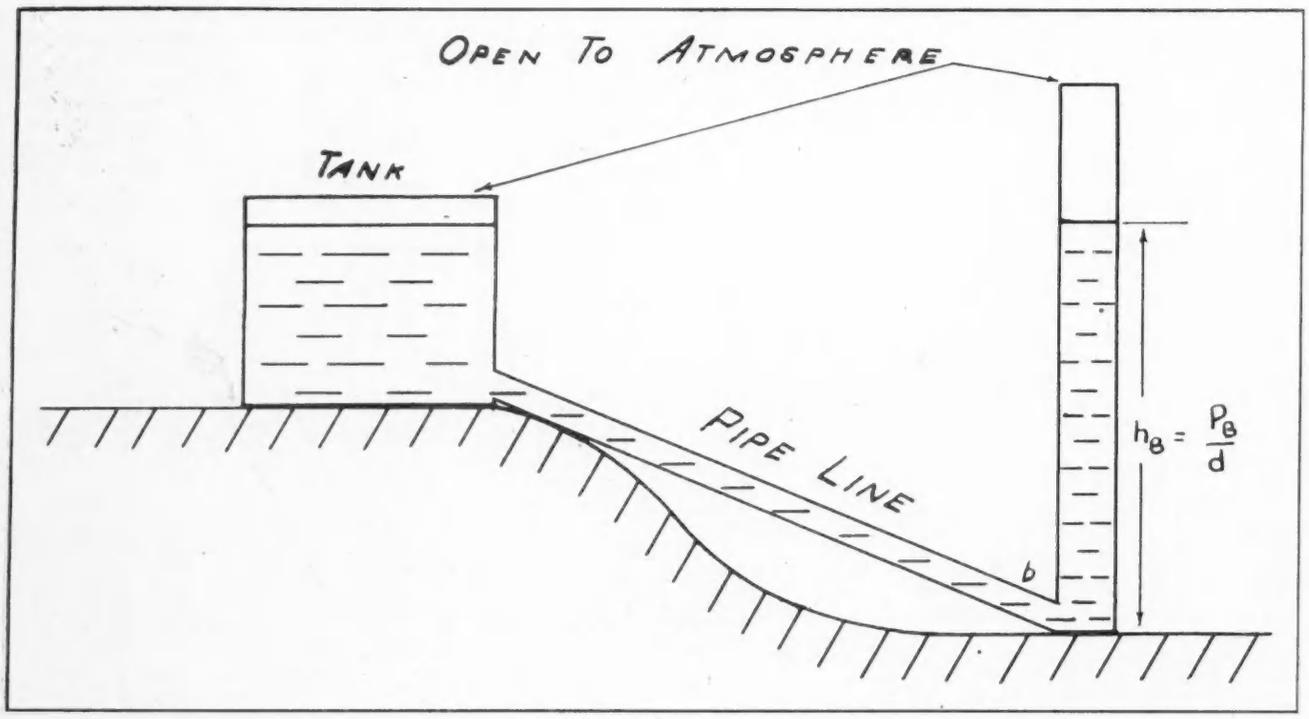


FIGURE 5

The Siphon

(a) The force tending to move the liquid through the siphon toward (N) is the difference between atmospheric pressure and the pressure of the liquid arm (ab).

(b) The force tending to move the liquid through the siphon toward (M) is the difference between the atmospheric pressure and the pressure of the liquid arm (ac).

(c) Since the atmospheric pressure is practically the same at (b) as at (c) the force tending to move the liquid toward (N) is greater than that tending to move it toward (M) by the pressure of a column of liquid whose length is ac-ab, or (h).

The above is the reason water or other fluid will siphon into the hole from any tank on the surface. It is also the reason for closing the discharge immediately upon landing the plug when doing a dry cementing job. We may liken the vessel (M) to the truck tank and the vessel (N) to the hole with the connecting tube corresponding to the tubing or pipe in the hole (Figure 6).

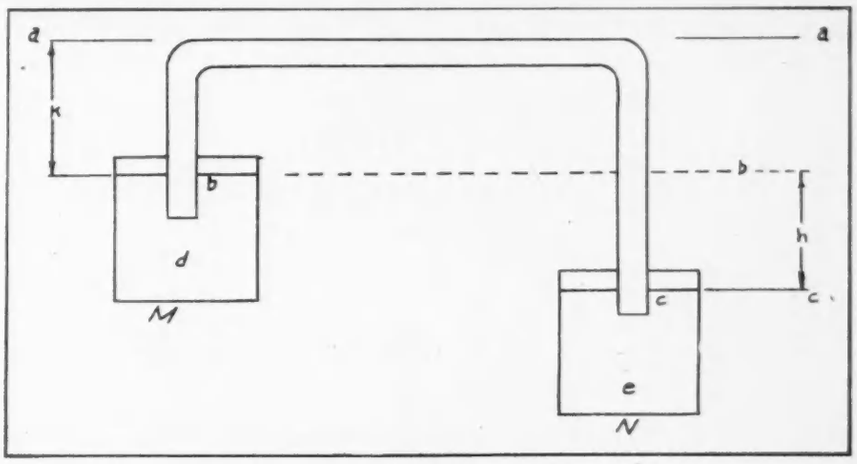


FIGURE 6

Methods of Expressing Pressure

In most problems of hydraulics the atmosphere has access to both sides, or the top of the mass of liquid with which we are concerned. Consequently, in every-day usage the atmospheric pressure (Figure 7) is taken as a datum and is called zero pressure. On all gauges used in cementing work and acid work the gauges are designed to read zero at atmospheric pressure.

When the gauge reads 500 pounds pressure the pressure is actually 500 pounds above the local atmospheric pressure and if it reads 20 inches of mercury on the vacuum side of a compound gauge (a gauge that reads both pressure and vacuum) the pressure is that much below the prevailing atmospheric pressure and is termed a partial vacuum.

For all practical purposes in cementing and acid work where it may be necessary to use the value of atmospheric pressure it may be assumed to be 14.7 pounds per square inch. Referring to Figure 7, it is intended to denote that the absolute pressure of the (O′—O′) line is 14.7 pounds per square inch above the ox line which is absolute zero, ox line being the line of total vacuum.

There are various ways of expressing pressure.

In gas measurement where orifice meters are used the units of pressure are inches of mercury or inches of water. For other work the units may be feet of water or pounds per square inch.

Pounds per square inch, and inches of mercury (vacuum) suffice for all practical purposes in cementing work. However, it is frequently necessary to convert feet of water or mud to pounds per square inch.

The following examples will illustrate the rule:

How much pressure will one foot of water exert?

Solution:

$p = Hd$ (Equation for pressure)

$p = ?$

$H = 1$ foot of water

$d = 62.4$ pounds per cubic foot

Therefore—$p = 1 \times 12 \times \frac{62.4}{1728} = 0.433$ lbs./in.

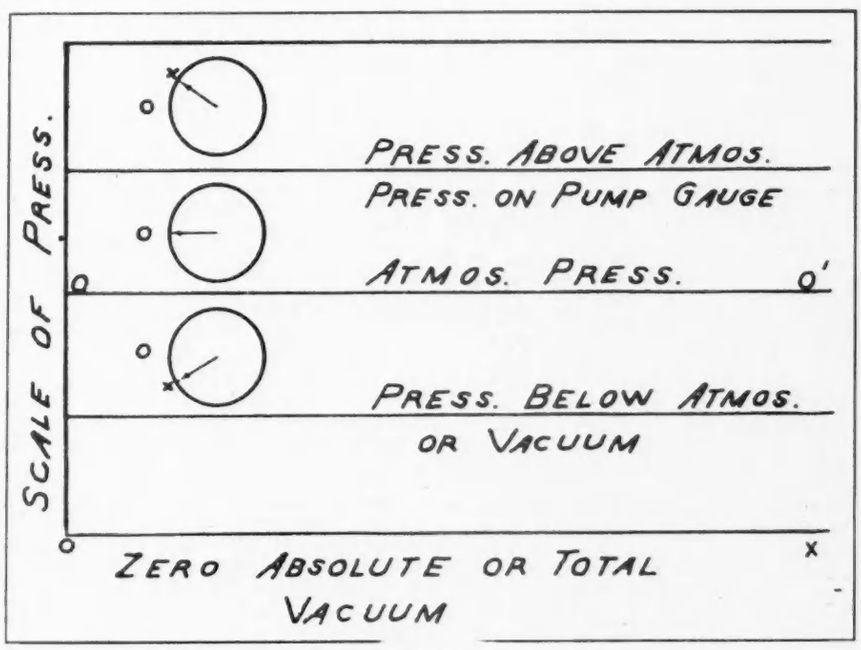


FIGURE 7

In other words a column of water 1 foot in height or having a pressure head of one foot exerts a pressure of 0.433 pounds per square inch.

Since mercury is 13.6 times as heavy as water one inch of mercury will exert a pressure of $13.6 \times \frac{0.433}{12} = 0.491$ lbs./in.^{2}

(1) We have a container weighing ½ pound with a diameter of 4 inches and a height of 10 inches with fluid in it. What is the density per cubic inch and the density per gallon? The weight of the container and fluid is 6 pounds.

Solution: 1 gal. = 231 cubic inches.

$W = DV$ or $D = W/V$

$W = 6 - ½ = 5½$ pounds weight

$$V = \frac{1 \times \pi d^2}{4} = \frac{\pi \times 4^2}{4} \times 10 = 125.66$$

$$D = \frac{5.5}{125.66} = 0.044 \text{ pounds per cubic in.}$$

$D = 0.044 \times 231 = 10.1$ pounds per gallon.

(2) Say we are on a rig and have a set of scales but no container especially for the purpose of weighing mud. We can take an oil can or any container and determine the approximate weight of the mud. First we will weigh the container full of water and then full of mud. Note we must deduct the weight of the container from the total weight of the fluid and container to find the weight of the fluid along. Say the water weighed 5 pounds and the mud 6 pounds.

Solution: By our definition of specific gravity (s).

$s = 6/5 = 1.2$

Then since water weighs 8.33 lbs/gal.

Weight of mud 8.33×1.2 10 lbc/gal.

(3) Suppose we have a well 4000 feet deep loaded with an 11-pound mud and we wish to determine the bottom-hole pressure due to the mud column.

Solution: 1 foot of water will exert a static head or pressure of 0.433 pounds per square inch.

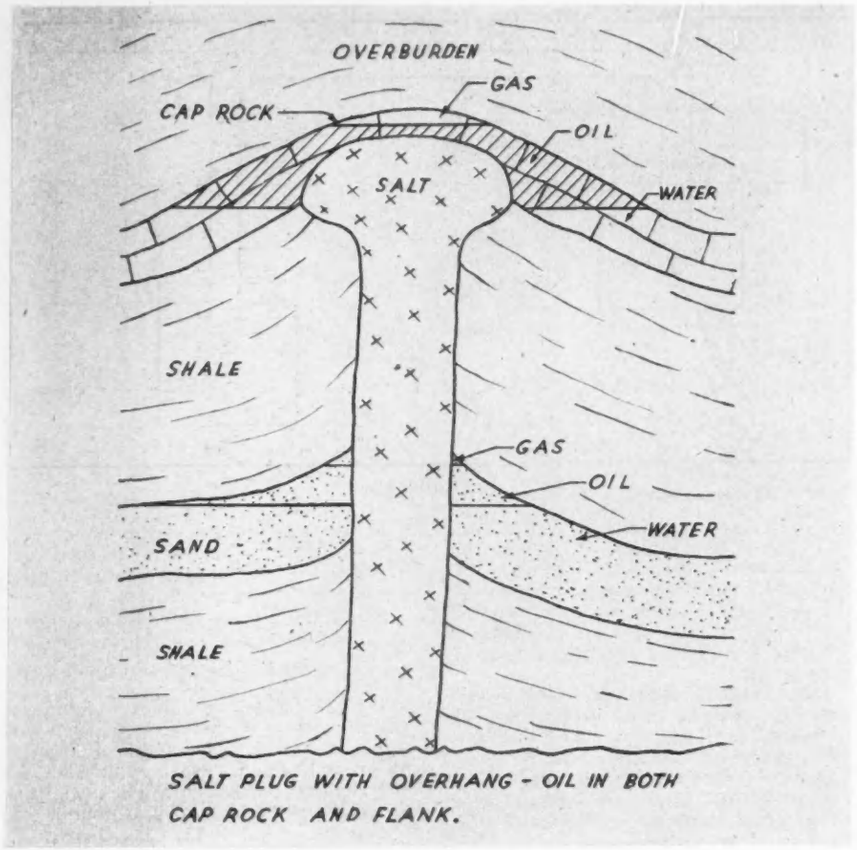
Specific gravity 11/8.3

$$p \; Hd \cdot 12 \times 4000 \times \frac{62.4}{1728} \times \frac{11}{8.33}$$

Since (p) is expressed in pounds per square inch we must convert (H) to inches and the density to cubic inches. Hence, $4000 \times 12 \times 62.4/1728$. p 2280 lbs/in^2

(This is the second of four articles. The third will appear next week.)

A Theory Domes



SALT PLUG WITH OVERHANG - OIL IN BOTH CAP ROCK AND FLANK.

Known salt domes on the Gulf Coast may be only a segment of a system of similar structures

By RAYMOND D. SHREWSBURY, Petroleum Engineer

IN POSTULATING the following theory on the genesis and occurrence of salt domes the writer trusts that it may lead to continued activity, not only in the spotting of these interesting subterranean phenomena which have played such an important part in the history of the American oil industry, but that some method may be adopted that will enable the geophysicist to locate and outline the many salt domes which undoubtedly exist within a broad off-shore belt along the Gulf of Mexico and the Caribbean Sea.

The literature contains many profound hypotheses on generic construction of salt domes but no definitive conclusions, to the writer's knowledge, have been set down. Therefore, one more theory along an investigative line which appears to have been but casually treated, might in a measure contribute to further research and consideration of the problem. Because of the industry and government's current interest in off-shore oil-bearing lands, any discussion on salt domes, which may largely influence off-shore production, might be timely.

The nation's past performance in producing the petroleum needed to lubricate and activate two wars as well as to maintain the marvels of an industrial age unsurpassed in the history of man, has led many leaders in the oil industry to believe that there can never be an oil shortage and that, as one well-known executive declared years ago: "When the time comes the Lord wil provide." The writer is by no means "bearish" on the nation's oil position, but certain hard facts must be faced and when studied logically must inevitably dampen the "bullish" attitude of those who maintain that the nation's oil resources are inexhaustible. It is quite true that the land area of the United States has to date supplied two-thirds of the world's oil requirements. But this prodigal expenditure of our petroleum resources leads to the sober conclusion that we have depleted our treasury of just that much of an irreplaceable resource. Economists who have studied our current oil position point out that our rate of new discoveries has declined to an almost alarming degree; independent oil companies who before the war gave no consideration to foreign oil sources, are bidding for choice concessions in South America, while major oil companies who have been engaged in international oil exploration and exploitation are closely evaluating the present world situation and wondering if they will be able to maintain their hold on the rich and undeveloped deposits in the Middle East.

Logically, it would appear that the sane approach to the problem of increasing our national oil reserves is to seek for new oil within the confines of our national borders and along the vast unexplored areas off the shores of our continent. Strategically, it would serve the nation to develop petroleum in areas which cross no international lines and which, in time of war, can readily be defended.

A glance at a map will show that practically the enitre shorelines of the Caribbean and the Gulf of Mexico are adjacent to oil production. Because these areas which are contiguous to the shorelines have been proved to contain thick columns of sedimentary rocks, the production from these fields have been prolific and in some instances, sensational. There appears to be no logical reason why the same thick sedimentary beds may not be found off-shore. Surely, a few feet of water need not become an insurmountable barrier to exploration and drilling and who will declare that the limits of our oil fields have been marked by the shorelines? In effect, the oil operator must overcome his fear of water. He must consider water as just so much "overburden" to be drilled through to the productive oil sands which he will encounter.

Salt Domes

Any discussion of the Gulf Coast oil fields inevitably turns to the consideration of the salt domes which primarily led to the development of this rich oil belt. The importance of salt domes and their relation to suitable structure were known and appreciated by the wildcatter at the turn of the century who used these geological phenomena in the search for oil along the flat, coastal plains. Salt domes were acceptable geology in an era where geology had not yet become recognized as a science. In the writer's opinion the faith of Lucas and other legendary stalwarts of the oil industry whose names have been blazoned across the pages of the Gulf Coast's romantic history in the search for black gold, holds good today as it did more than 40 years ago, and that the more salt domes we can locate the more oil will eventually be found to replenish the stream which is inexorably being depleted.

From current observation and study

on Occurrence of Salt

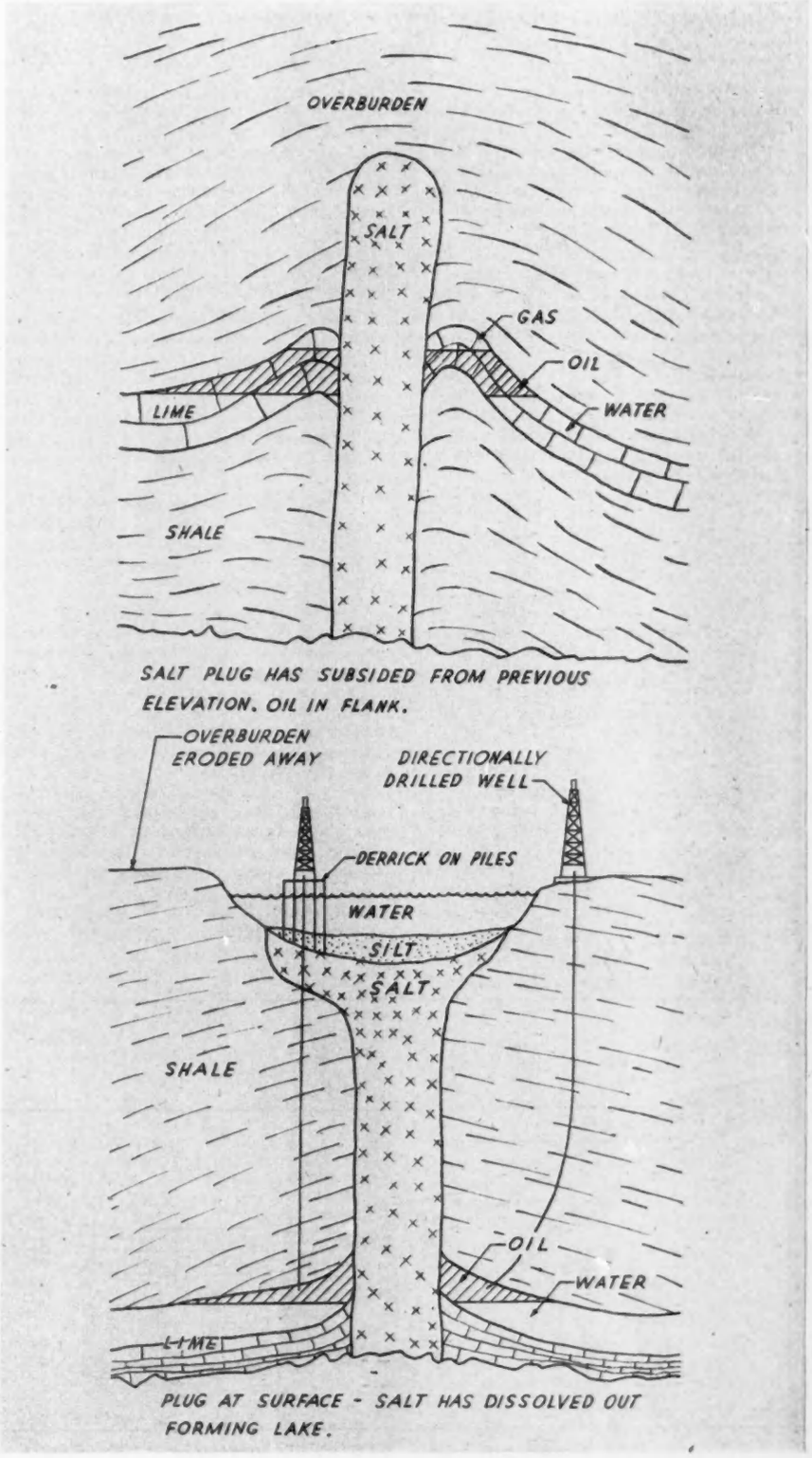
it would seem that salt domes appear to be "married and have large families," i.e., they appear to have "bred" in clusters and seem to follow a broad general pattern in occurrence. Therefore, the logical conclusion is to determine the best localities where they may be found and in this connection a certain latitude of speculation may be permitted.

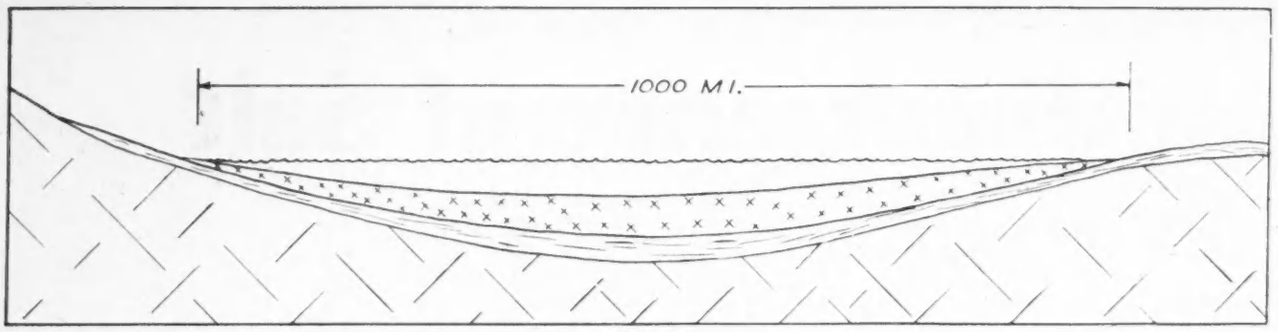
Geologists, generally, are reluctant to stick out their professional necks when pinned down for a categorical declaration as to the origin and disposition of salt domes yet to be discovered. The writer, however, has no hesitancy to venture his ideas and trusts that they may result in further discussion and perhaps add to our present knowledge of salt dome occurrence and structures. A method already has been advanced[1] which might be developed as an important tool in the continuation of the study of salt domes which undoubtedly exist beyond our shore limits and which eventually will contribute in the important task of replenishing our depleting oil reserves.

While divergence of opinion exists on certain phenomena associated with the occurrence of salt domes, there seems to be general agreement that the beds from which the salt rises to form salt domes lie many thousands of feet beyond the deepest depth to which the drill bit so far has penetrated. The difference in specific gravity between the salt and the overlying material causes the salt to rise, much as oil pops up through water. This indicates that both the salt and the overburden have similar reactions as liquids and tests show that, when subjected to sufficient pressure, salt will become plastic and may be forced to flow. From the pressure required to bring this about and the average weight of sedimentary materials the approximate depth to the salt may be calculated. Obviously, if materials at such depths have become liquid, there is no possibility of drilling into them by any known method, nor would it be advisable to do so.

Salt Occurrence

Since we know that the salt itself is found at great depths the question arises as to how it originally was placed. So far as is known, the only way for salt to accumulate in large quantities is by precipitation from the waters of an inland sea. Therefore, it is logical to assume that the bed of the sea must have subsided and other sedimentary materials washed in. Since pressure is a factor in the plasticity of salt, it must be assumed that the overlying thickness of





PRIMARY STAGE - INLAND SEA WITH SALT BEING DEPOSITED.

sediments must have reached very great proportions and that many miles of sediments must have been laid down for the salt to become plastic. Since the miles-long columns of salt vary in diameter from a few hundred feet to a quarter of a mile or more, the quantities of salt involved must be immense.

A classic method for demonstrating how and why the salt rises makes use of paraffin and mercury in a beaker. The molten paraffin is poured into the beaker and allowed to solidify. The mercury is then superimposed and heat is applied to the beaker. Under favorable circumstances this experiment results in very satisfactory miniature replicas of salt plugs. They bear a strong resemblance to the illustrations in the textbooks. In conducting this experiment, considerable care must be exercised to prevent the paraffin from rising around the sides of the beaker. In fact, an initial hump in the surface must be provided to induce the plug to rise where desired. This is fine, as far as it goes. But, when a round-bottomed vessel is substituted for the beaker, the plugs invariably rise around the perimeter. And the salt beds, even if they were originally deposited flat, could hardly have remained so as they were being forced downward.

Another inconsistency in this experiment lies in the fact that heat instead of pressure is used. In the opinion of the writer no amount of vertical pressure would cause the solidified paraffin to rise through the mercury. A much better-looking model could be obtained by applying pressure from some outside source and forcing the paraffin through an orifice.

As we know, some sediments overlying the salt beds are solid rock and this appears to rule out the possibility that the plugs were formed as the result of pressure from immediately above. It is as if one were to step in mud with bare feet. The stuff probably would ooze up between the toes; but, if there were so much as a piece of paper underfoot, the mud naturally would go around the feet.

The writer believes that the salt domes in Louisiana, Texas and Mississippi constitute only a small segment of a very large system of similar structures, most of which are now submerged and which are distributed about an area of subsidence which has persisted throughout most of the geologic time.

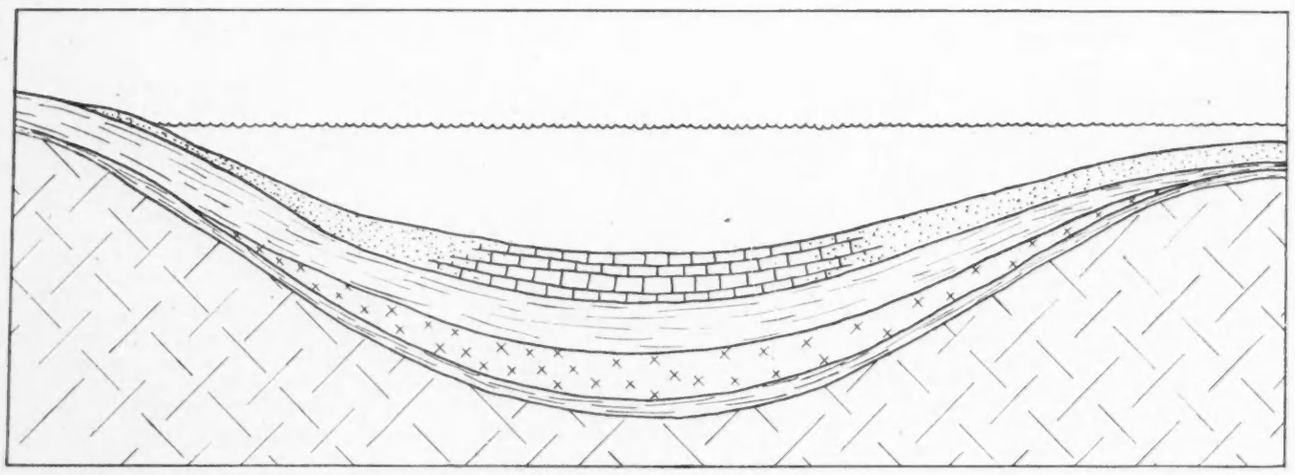
If this theory is correct and we can locate the center of the area, the rest should be comparatively simple and a complete picture of the salt dome system can be mapped.

Some believe that the upward movement of the plugs underlying some of the domes on shore is still progressing. This is quite possible if the force originates from some point under the Gulf. But in most cases erosion probably keeps pace with the uplift and geophysical exploration is necessary to locate the structures. Since there is little or no erosion under any considerable depths of water the submerged domes may appear as humps of characteristic shape. Deposition of sediments, being more or less evenly distributed over a considerable area, would not tend to mask them. This might be likened to placing a football in bed and pulling the covers over it—the ball still could be easily located.

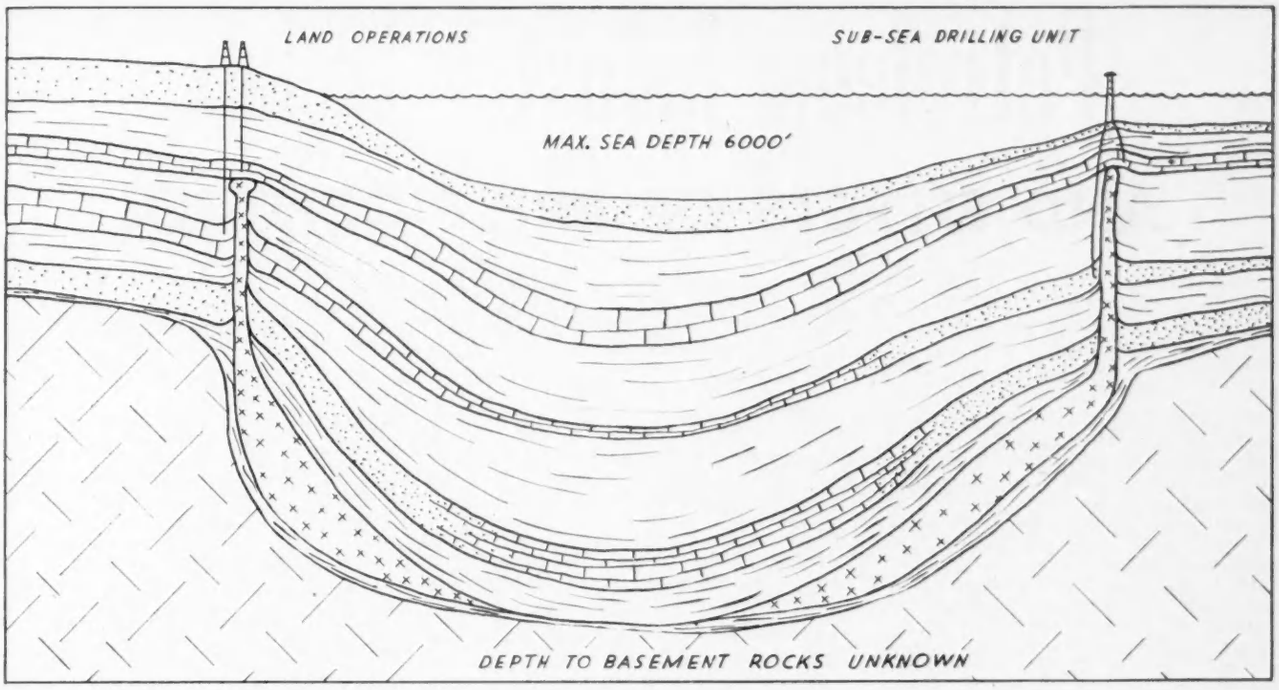
Settling Pit

Since it is held that major land and sea areas tend to maintain their relative positions, that part of the sea between North and South America must have served as a settling pit for much of the erosional debris from both continents. Had there been no subsidence the sediments would long since have filled the entire basin. Instead, within this basin are found depths that exceed the general average of the Atlantic Ocean. As recently as the last Ice Age this area must have been land-locked. It is a reasonable hypothesis that during much of the preceding time conditions were suitable for the deposition of salt. The beds so formed would be general over the area covered by the inland sea.

When normal sedimentation was resumed it is logical to suppose that thicker beds would occur in the central part of the basin where subsidence was greater. The result would be a great bowl-shaped basin with the salt beds sloping up and away from the interior. The salt most deeply buried would first reach the plastic flow stage but it could not move until that surrounding it also had been converted. That the salt tends to remain in its own stratum is indicated from the exceptional purity of specimens obtained from the plugs. Only when the pressure had been transmitted to the outer limits of the sea in which the salt was originally deposited would it break out and rise through the overlying formations. But the mere weight of the material immediately surround-



INTERMEDIATE STAGE - NORMAL SEDIMENTATION WITH SUBSIDENCE.



PRESENT STAGE: SALT FLOWING, DOMES FORMED OR FORMING.

SALT LIME SAND SHALE SAND & SHALE MAGMA

ing the plug could not exert sufficient pressure to keep the salt in the flow state. Therefore, in order for the salt to reach a point near the surface, there must be present a rock formation sufficiently rigid to transmit the weight of the surrounding area to the top of the salt column. The uplifted rocks, if sufficiently porous, would prove excellent oil and gas reservoirs.

However, in few cases would the salt actually reach the surface because release from pressure would cause it to crystallize and movement would be retarded. It is quite reasonable to suppose that the column might even subside somewhat and cause a reverse bend in formations adjacent to it. Actually, except for temperature, there seems little essential difference in the upward flow of lava and that of salt. If gases were accluded in the salt the domes might blow their tops with considerable violence. In this connection other similarities to volcanoes may be noted. For example, in a specific area, some volcanoes may be much older than others, some active and others dormant; thus, over a long interval of geologic time, movement of the salt may have been intermittent. It is reasonable to assume the older structures would offer the better oil prospects.

No one may venture a guess as to the number and extent of salt beds that are buried in a given area but it is reasonable to assume that the areas of maximum subsidence have not shifted appreciably. Each salt bed would generate its own system of surrounding domes, but if the edges of the beds happen to coincide, the "offspring" might be considerably intermingled. However, for any single bed the domes should form a more or less continuous system marking the border of the ancient sea in which the salt originally was deposited. If all the plugs have their origin in a single bed, or if several beds cover the same area, the domes should be found along the old shoreline regardless of where the present shoreline may exist.

Unstable Shoreline

The present shoreline is obviously unstable. The average slope of the bottom for many miles out into the Gulf of Mexico is only about one foot per mile. The sea has periodically invaded the entire Mississippi valley. Movement, up or down, along the coast of only a few feet would shift the line as many miles. The sediments in the area of the known domes are conceded to be several miles in depth and if the reasoning here presented is correct we may assume that those out under the deeper part of the Gulf must be several times as thick. Since the salt will have been forced out and away from the central point, no domes are likely to be found in deeper waters. How wide the band of domes may be is unknown but it is proposed that it extends from each end of the presently known area and joins somewhere to form a closed system.

If petroleum, to, should follow the laws postulated for salt, the reservoir in some of the structures may be continually replenished from the tremendously thick and deeply buried source beds out and under the areas of subsidence. This might explain the huge quantities of oil produced at Spindletop and in other areas where considerably more oil was captured than has subsequently been calculated possible in the reservoirs.

The writer does not doubt that eventually the under-water oil deposits will be exploited. In claiming oil resources of the continental shelves the federal government intimated that it planned to exploit them. The Coast and Geodetic Survey several years ago located some 60 probable salt domes along the 100-fathom contour line between the mouth of the Mississippi River and off Sabine Pass. Considerable geophysical exploration is now in progress in the shallower waters of the Gulf. The State of Louisiana has already sold leases several miles off-shore. The tidelands controversy is indicative of the interest evinced by the oil industry and others in the possibilities for oil which exist along the coastal states. It is possible that international negotiations may be necessary before a comprehensive program for exploiting the potentialities of the Gulf and Caribbean areas can be determined and carried out.

Ordinary soundings with modern instruments should determine whether or not there are irregularities resembling salt domes in the ocean floor surrounding the deeps. Hundreds, perhaps thousands of salt domes, may eventually be located and mapped. If oil originated in the sea and with marine life, let us return to it for a new supply of crude. Nature is benevolent but we can hardly expect her to hand out her treasures on a "dry land" platter.

Drilling under considerable depths of water presents new technological problems. To date, sub-sea drilling operations have been conducted from platforms mounted above the surface and from barges, but these methods seem hardly applicable to the open sea. Storms and high tides, some of which have blown ships varying distances inland, are serious hazards to a normally expensive operation. Salt dome fields have proved exceptionally prolific and the industry should investigate every possibility that offers a reasonable measure of successful development.

REFERENCE

1 "Deep Sea Drilling," THE OIL WEEKLY, Dec. 16, 1945.

Petroleum Industry Trends

AND EFFECTS OF PRICE CONTROL

By HOWARD W. PAGE
Coordination and Economics Department,
Standard Oil Company (N. J.)

IT WOULD be less difficult to describe future industry trends if we could look forward to a prompt return to a free market. It does appear, however, that if the U.S. consumer is to receive the petroleum products he needs during the next several years, the industry must be released without delay from the price controls that now limit its activities. Actual crude production and refinery operations recently attained were 7 percent above the average operations required in 1946. Therefore, there is adequate productive capacity at present to assure fair prices to the public. It is not at all clear that this will be the case several years hence, unless the industry is now given the freedom to prepare for the future. A brief look at the probable future requirements of crude and products, and a comparison of the production possibilities under conditions of continued price control, will serve to show the urgent importance of this matter (See Table 1).

The estimates of requirements in Table 1 are probably a bit low, perhaps by as much as 2 percent or 100,000 barrels daily. The production figures, on the other hand are at or close to, the maximum in 1947 and 1948. Imports could not be increased beyond the figures shown without depriving foreign consumers of their requirements, or correspondingly by increasing exports from the U.S., which, of course, would not help our situation on balance. In other words, under the best of circumstances, it is not going to be easy to meet the estimated requirements of this country during the next several years, even though we can do so comfortably at present.

The maximum efficient rate of crude oil production as determined by the Petroleum Administration, in conjunction with industry committees, was about 4,600,000 barrels daily in July, 1945. A gradual decline in this rate has taken place since the first quarter of 1941. A projection of this trend, and there have been no developments yet to indicate a change in trend, would show a MER of about 4,550,000 b/d average for 1946, 4,500,000 b/d for 1947, and 4,450,000 b/d for 1948. Therefore, based on the above assumptions, crude production would have to exceed maximum efficient rates in 1948, and possibly in 1947, if estimated requirements are to be met. In other words, the oil wells would be operated at such a high rate that some oil would be left in the ground and could not be recovered with presently known methods. This would meet our requirements in 1947 and 1948, but only by reducing in a greater amount our capacity to meet the growing requirements of later years.

Price controls must be lifted promptly if the consumer is to receive oil products he needs during next few years

More Drilling Necessary

The way to correct this undesirable situation is to reverse the downward trend in domestic crude productive capacity by finding and developing more oil fields. This will require an increase in the present drilling activities and, therefore, increased expenditure of capital. The incentive to risk capital in this hazardous business is the possibility of profit with average luck. Most of the capital flowing into these activities comes from the sale of crude oil. Today's controlled price of crude is on the average 25 cents per barrel less than the latest known average costs of finding, developing, and producing crude. With subsequent increases in labor and material costs, the spread is probably higher today. This means that an average producer receives less for his crude than it costs him to replace it and, therefore, a producer would have to be considerably luckier than the average to break even on his investment. If price control continues, it is reasonable to expect a decline rather than an increase in drilling activities and an even lower efficient productive capacity in 1947 and 1948 than estimated above. Additional imports cannot helps us in the years immediately ahead. Foreign production cannot be increased so quickly.

The time to get started on development of productive capacity for 1947 and 1948 is *now*, because exploration and drilling take *time*. The controls to which the oil industry has been subjected have failed because of the lack of foresight in regard to the trends in requirements and because of the mistake in not allowing the industry to bring about the necessary adjustments.

The results of continuing the present situation for a year or more would be to require the rationing of consumption, or, alternatively, subsidies to cover production losses and rapidly accelerating declines in future productive capacity. As the supply continued to fall further and further short of demand, more and more governmental controls would appear to be justified. Meanwhile, the public would be misled. If our own government officials fail to understand the economics of petroleum, we cannot expect the general public to succeed. We must face the risk that the public would come to the conclusion that scarcity and controls were inevitable, because the oil industry had failed.

If the consuming public could exercise its choice of paying ½ to 1 cent per gallon more now, rather than being forced into rationing with its attendant black market operations a year or so from now, there seems little doubt as to what they would choose. It is hoped that in the interests of the public and the national security, this stifling price control will be eliminated promptly.

The trends in individual product requirements are particularly significant. The relationship between product requirements has been abnormal this past winter and this will continue so to some extent for the remainder of the year. A definite change is forseseen in 1947 and 1948.

Last winter, gasoline requirements were relatively low, due to complete cessation of military purchase of aviation

From an address at the Empire State Petroleum Association Convention, Elmira, N. Y., April 12, 1946.

TABLE 1

Probable Future Requirements of Crude and Products

	THOUSAND BARRELS DAILY		
	1946	1947	1948
Domestic Consumption Requirements (Including U. S. Military)	4,680	4,830	5,160
Domestic Working Stock Replenishment	20	20	...
Exports (Excl. U. S. Military)	400	400	390
Total United States Petroleum Requirements	5,100	5,250	5,550
These Requirements Could be Supplied in the Following Manner:			
Domestic Crude Oil Production Required	4,400	4,500	4,700
Natural Gasoline and Condensate Production	340	350	360
Synthetic Gasoline from Gas	...	...	10
Imports (Principally Residual Fuel and Heavy Crudes)	360	400	480
Total Supplies	5,100	5,250	5,550

gasoline, sharp declines in purchases of military automotive gasoline and the fact that passenger cars on the road were at the lowest point in many years, both as regards the past and future. At the same time, kerosine requirements went up with the elimination of restrictions and the upsurge in export requirements. The same was true of distillates; that is, heating oils and diesel fuels. The military requirements for these products continued at a high level, while civilian requirements increased with the elimination of restrictions on consumption. Residual fuel oil demands were extremely high. This was due particularly to very high continued use by the Navy and increased requirements over wartime levels by cargo ships, which have been carrying grain and coal to Europe and, in general, maintaining an unexpected high level of activity.

These unusual requirements, which were foreseen directionally last year by industry and PAW economists, could be met only by substantial changes in relative product yields in the refineries. Here again, price control was involved. The refinery prices for the various products were fixed by OPA at a time when gasoline requirements were relatively large and the requirements of lower valued heating products were relatively small. With prices of all individual products fixed, the change in yields from a barrel of crude oil to meet the new pattern of demand, with the relatively large requirements of low valued products, means that the income to the refiner, and the overall price, is reduced. The situation is similar to that of a butcher with fixed individual prices for his cuts having his sales change to fewer steaks and more hamburger. He couldn't convert his steaks to hamburger without losing income.

OPA Sees The Light

The normal profit margin of the refiner had already been reduced by increased labor and material costs. Loss of income would have put him out of business in many cases. The natural result was that most refiners tried to maintain maximum yields of gasoline, the higher-priced product, with the hope that conditions would change before it was necessary to shut down operations. This situation was brought to the attention of OPA. Suggestions were made to adjust the price ceilings between individual products so that refiners could adjust their yields to demands without going out of business. No request was made to increase the total refiners' income, even though a substantial increase was justified by law, based on 1936-1939 refiners' margins and increased costs subsequent thereto. It took some time for OPA to understand that fixed individual product prices did not mean fixed income to the refiner when his relative product yields changed. The first reaction in Washingotn was that a shortage of heating products was inevitable and, therefore, distribution controls should be reinstated. Industry representatives vigorously opposed this step, which would have led to rationing, in spite of the fact that ample producing capacity existed. Finally, OPA was induced to make a change in the kerosine ceiling prices. The results were immediate and the kerosine shortage crisis disappeared completely.

Similar action and results were obtained with heating oils after persistent efforts by industry committees. It was only as a result of these efforts and patient explanation of the facts to OPA that the public was saved from a serious shortage of these products during last winter.

The residual fuel oil situation, however, was not corrected. There is now a critical shortage of this product, in spite of surplus crude oil productive capacity and refining capacity available since V-J Day. Again, inflexible price control is the difficulty.

Residual fuel is a special subject economically. Normally, it is a by-product. That is, the refiner converts crude oil into the maximum of other products and residual fuel oil is what is left. He must dispose of it in order to keep operating so he sells it for what he can get. The price of residual is normally determined by its relative value to coal. Many large utilities, for example, have equipment to burn either coal or oil and switch from one to the other, depending on the price. During the war the OPA granted considerable increases in coal prices, but allowed practically no change in residual fuel oil prices. As a result, residual fuel oil has been considerably cheaper than coal all through the winter, which, of course, resulted in high demands for residual. These industrial demands, plus the unusually high Navy and shipping requirements mentioned previously, resulted in a total demand exceeding the domestic by-product production, plus maximum imports. There were several methods available to obtain sufficient additional residual production to meet the demand, but none of them was adopted in time to prevent the present difficulty.

(1) An increase of total crude runs early in the winter, made possible by adjustment of yields to minimum gasoline and maximum kerosine and distillates, with concurrent increased production of by-product residual. The OPA delays in accepting industry committee recommendations prevented the entire industry from taking this action in time.

(2) If ceiling prices for distillates had been adjusted in time, additional residual could have been obtained by blending distillates with by-product residual, provided the refiner was given a price adjustment to recompense him for his loss in degrading a product selling for $1.785 into a product selling for $.97. It was done during the winter and spring of 1943 when a similar situation arose. This time OPA turned down a similar pricing plan.

(3) The only other alternative (aside from removal of price controls) was to raise the ceiling price of residual high enough to cover the cost to the refiner of purchasing additional crude oil for the purpose of producing more than the minimum by-product fuel oil. At the present time, prices of crudes which could be made available in substantially greater quantities vary between about $1.51 per barrel and $1.76 per barrel delivered at Gulf Coast refineries. The ceiling price of residual fuel is $1.18 per barrel ($1.26 for navy special grade). Statements have been made that "there is a shortage of residual fuel because the refiners make *more* profit from other products." That is a misleading way of stating the case. It would be more accurate to say: "There is a shortage of residual fuel because with present ceiling prices a refiner would lose — out-of-pocket — between 25 cents and 50 cents on each additional barrel of navy special fuel oil he manufactured." Even without increasing refining operations about the March level, the present shortage of navy special residual fuel oil could be overcome entirely by utilizing the distillate heating oil which is going into stocks at rapidly increasing rates. The ceiling price of this product is $1.785 per barrel in the Gulf, but, in effect, the refiner is being asked to sell it for $1.26 per barrel to the Navy.

Last winter's experience is an excellent example of how inflexible price control on a multiple product industry can create shortages when overall surplus productive capacity is available. The industry recommended complete elimination of price control immediately following V-J Day. If this had been done, no shortages would have occurred and prices would have stayed reasonably low because of competition.

Even if complete elimination of ceilings was not granted, the industry and the public had the right to expect elimination of individual product price controls so that prices could perform their normal function of balancing supply and demand between individual products where there was a surplus of total products. Failing this, it was hoped that at least ceilings would be adjusted intelligently with changing demands for products. Adjustments were made—too little and too late. In spite of all adjustments, the refiner is worse off than he was before and the consumer isn't getting all of the products he wants. Requirements for products are continuing to change. What other crises would be brought about if this method of stifling needed production continues is difficult to forecast.

To illustrate the changes in require-

TABLE 2

Total Requirements—Domestic and Export

	1946	1947	% Above (Below) 1946	1948	% Above (Below) 1946
Gasoline	1,965	2,152	9.5	2,331	18.6
Kerosine	243	244	.4	266	9.5
Distillate	694	725	4.5	798	15.0
Residual	1,385	1,270	(8.3)	1,252	(9.6)
Asphalt	129	143	10.9	156	20.9
Lubes	114	124	8.8	131	14.9
Other and Loss	434	463	7.0	485	11.2
Total Products	4,964	5,121	3.2	5,419	9.1
Crude Oil (Losses and Export)	136	129	(5.1)	131	(3.7)
Total Petroleum	5,100*	5,250†	3.0	5,550	8.7

* Includes working stock increases: Kerosine ..... 5; Distillate ..... 10; Crude 5

† Includes working stock increase: Residual 20

ments which are always occurring in the industry, Table 2 shows a break-down by individual products of the total requirements shown previously.

Items of particular interest to marketers in the forward estimates, that are not disclosed in this table, are increases o f20 percent in domestic gasoline consumption in 1948 over 1946, 4 percent in kerosine, and 32 percent in heating and diesel oils.

A casual glance at the percentage changes from 1946, which are expected in the various products, indicates the wide variations the refiner faces in his operations. It also illustrates the absurdity of inflexible price ceilings on each individual product in this multiple product industry. No one is smart enough to calculate in advance what price changes are needed to maintain constantly a balance between supply and demand for individual products at all times and in all sections of the country. Only a free market representing the composite opinion of all producers and consumers will do the job satisfactorily. This is no longer an economic theory, it is a fact established by actual results.

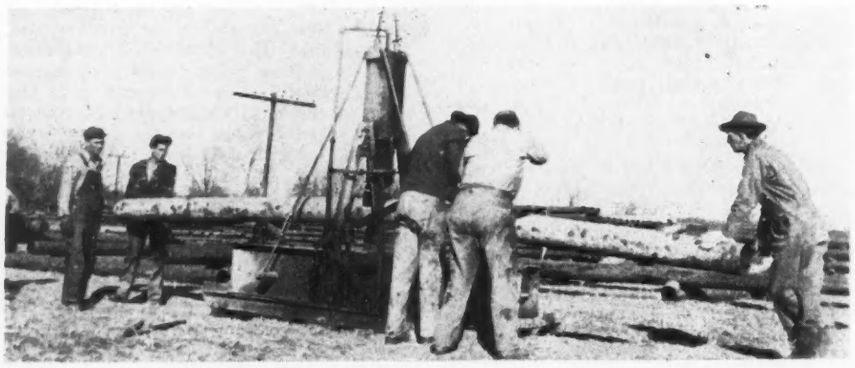
World Picture

So far only United States operations have been described. However, to evaluate the domestic situation, the picture in the rest of the world must be known. At the present time producing and refining activities outside the United States are at maximum capacity. The rate of operation is even higher than the wartime peak. There are many plans for the expansion of foreign producing and refining capacities. However, no sizable increases can be expected before 1948 due to limitations on materials. New refineries will require 1½ to two years for completion. Large pipe lines may take even longer. Meanwhile petroleum requirements outside of the United States are expected to increase even more rapidly than domestic requirements. That is the reason why export requirements from the U.S. are expected to continue somewhere near the present high level for the next three to five years.

Remarks are often made about the danger of "floods of foreign oil coming into this country." It will be physically impossible to obtain much more foreign oil in the next three years in view of the increasing foreign requirements and limited production capacity. The fact that very large proven underground reserves of crude oil exist outside the United States does not mean that production can be stepped up overnight. Wells must be drilled and roads, pipe lines, and harbor facilities built. This takes materials, manpower, money and *time*.

Much of the recent thinking and talking in the oil industry is based on the past when large surpluses of available productive capacity existed, both in the United States and outside. It is time to think of the present and future. Our estimate is that within one to two years, worldwide producing and refining operations will be at, or very near, maximum efficient rates. This condition will demand ever expanding activities in the petroleum industry, which can be accomplished effectively only if governmental restrictions and hindrances are eliminated.

Salvaging Pipe



Some Joints were bent to conform to the contour of the ditch when laid. When taken up, the joints must be straightened.

AN INTERESTING project in salvaging and reconditioning an abandoned pipe line is being completed in the Wewoka district of Seminole County, Oklahoma, by Interstate Oil Pipe Line Company. The old Seminole station is being dismantled and approximately five miles of eight-inch line from Cromwell to Seminole, which has been in the ground more than 20 years, is being taken up.

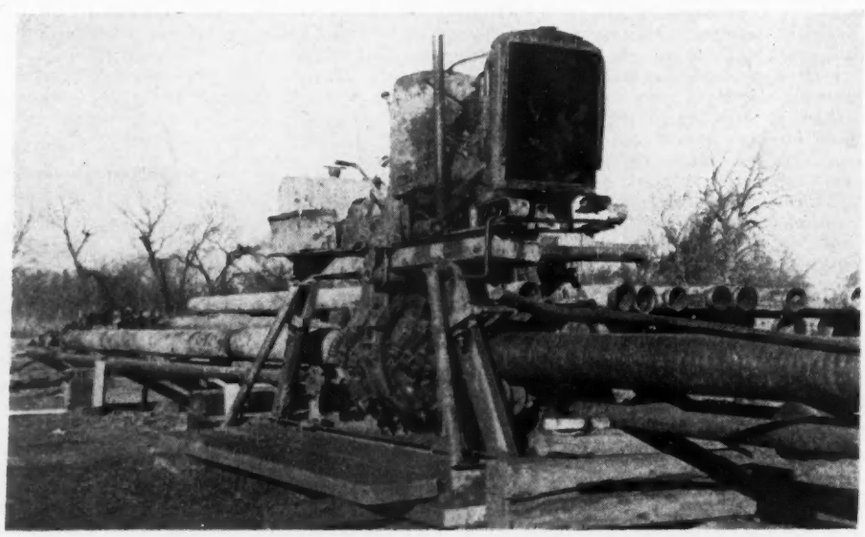
In salvaging the Cromwell-Seminole line, most of the dirt overlying the pipe was removed with a deep plow. Then workmen with shovels completely uncovered the old screw collars which held the joints of pipe. The welder followed up this operation to cut the screw coupled pipe in order that each joint might be lifted from the ditch separately.

A tractor with boom attached was used to pull the pipe from the ditch, laying it across the ditch to be picked up later by a truck and carried to the Cromwell station for reconditioning.

Each joint of pipe was put through a cleaning machine where sharp knives removed the dirt, scale and rust from the exterior surface. The inside was cleaned with a long swab.

After cleaning, the pipe was carefully inspected and each joint graded. Then an acetyline torch was used to cut away the threads and bevel the ends. When the pipe is used again it will be used in a welded line.

A pipe straightening machine was used to straighten crooked joints bent when the pipe was laid to conform to the contours of the ditch. After this step the pipe was sorted and stacked according to grade to be used again when needed.



Sharp knives in this cleaning machine scrapes dirt, rust and scale from the eight-inch pipe. Note difference in appearance of pipe before and after going through machine.

FOREMANSHIP *Tomorrow*

By D. H. CRALL, Field Superintendent,
Southern Oklahoma, Stanolind Oil & Gas Company

HUNDREDS of oil field superintendents, production foremen, sub-foremen, farm bosses, head roustabouts, tool pushers and gang pushers are asking this important question: "Will I eventually take a back seat because I lack a college education? Will I some day be set back and replaced with a college man?"

The trend is noticeably in favor of college men for executive and supervisory jobs. We have seen a number of old, practical oil field supervisors return to the ranks because their educations were inadequate to handle the clerical and accounting procedures of the new order. Will the technical phases of the oil industry demand a still higher plane of education?

The answer is **NO.**

I believe a grade school or high school education will be adequate for all the real needs of our present executives and supervisors. The problems of the oil field supervisor deal with so many different professions and trades that a technical knowledge of any one of them is of little advantage. These problems are for the geologist, the petroleum engineer, the chemist, the lawyer, the accountant and the tax man. They concern the rotary driller, cable tool driller, carpenter, blacksmith, welder, machinist, mechanic, electrician, pipe fitter, painter, truck driver and many others.

The supervisor need not do the work or supply the knowledge. He does not need to know if he knows the man who does know. He should gather the facts, apply the knowledge, make the decisions, direct and supervise the work. The supervisor's job deals with *people*. It is the workers job to deal with the machinery, chemicals, blue prints, surveys, maps, and so forth. The working tools of a supervisor are people. To be a good supervisor one must like people. He must understand them as a mechanic understands his engines.

People have mental working parts the same as physical ones. These mental working parts are as much alike and as different as the physical ones. All normal people have two ears, two eyes, ten toes and so forth; however, no two people are exactly alike physically. Our mental characteristics are just as similar and just as different.

Mental Forces

A portion of our mental make-up consists of six working parts called mental forces or desires. These are self-preservation, self-importance, possession, curiosity, love of people and sex. These forces normally control and direct our actions and reactions; they cause us to act.

Everyone acts and reacts not as he chooses but rather as he is caused to by the influence of conditions and of other people tempered by his own mentality. The study of how to direct and control these mental forces in people is called psychology, or foremanship.

Many books, some good, others better, are available on foremanship. Many training courses are being offered on this subject. Slide-sound films and moving picture films are available for teaching this important phase of a foreman's job.

These six mental forces are made to act by a controlling or connecting mental force called emotion. Our emotions fall into two opposite classes or types which are usually defined as negative and positive. Some of the negative types are fear, hatred, jealousy, envy, anger, resentment and suspicion. Some of the positive emotions are duty, pride, loyalty, love, honesty, faith and humor.

Both the negative and positive emotions cause our mental forces to act. The negative emotions tend to tear down our mental forces. The positive emotions stimulate our metal forces. For example, envy tends to tear down our mental force of self-importance. Pride tends to stimulate and increase our mental force of self-importance. We create the negative emotion of fear when we threaten to discharge a worker if he does not improve his work. This fear causes a reduction of his mental force of self-preservation. He reacts to restore this force; however, the restoration is never quite complete. This is why we finally become calloused to nagging. In other words, the mental force is almost completely torn down by negative emotion.

Now if we use the positive emotions of duty and pride by pointing out to the worker the changes or improvements which he is capable of making, we stimulate his mental force of self-importance. He reacts to this force and the stimulation tends to permanently increase this force.

Results obtained by the use of positive emotions are usually better and longer lasting than those obtained by negative emotions. The reaction obtained by the use of positive emotions is usually slower and therefore requires more patience on the part of the supervisor.

The difference between us mentally is the difference between our total and relative mental forces. One person is predominantly possessive, another predominates in self-preservation, etc. The "love of people" should be the ruling force in the true supervisor. "Love of people" is the rarest of all the predominating forces which accounts for the fact that Henry Ford once said, "I will pay more for the ability to handle people than for any other ability."

Self Control

A supervisor must learn to control and direct his own actions before he can successfully control and direct others. He should learn to dampen his reaction to emotional forces especially to the negative emotions. It requires persistent self-discipline to throttle and control one's reactions. It helps to keep telling one's self over and over: "Everyone is acting natural no matter what they do to me. I probably caused him to act; therefore, I should not react to his actions."

The "super" supervisor ignores his negative emotions. He creates only positive emotions in people he contacts. He takes a positive attitude in all things. He avoids negative discussion and thinking. He boosts, he helps. He is a true optimist, a real Pollyanna. Abraham Lincoln never citicized anyone or anything. His reason for not doing so was that he believed that criticism accomplished absolutely nothing. Criticism is the direct application of negative emotions. The application of positive emotions picks you up; it stimulates you; it increases your faith in your own ability; it gives you enthusiasm to do the job better.

Our present oil field supervisor has nothing to fear through his lack of education if he understands and likes the people he handles. The greatest statement of leadership made in the past century was: "I never met a man I didn't like."

With this statement as your goal you are in the best position to prepare yourself for "Foremanship Tomorrow."

D. H. CRALL, fiield superintendent covering the southern half of Oklahoma for Stanolind Oil & Gas Company, was born and reared in the oil fields and has made a study of foremanship and industrial psychology. He started dressing tools during summer vacations when he was 16 years old and in 1930 went to work for Dixie Oil Company as a gang pusher in Kansas.

D. H. Crall

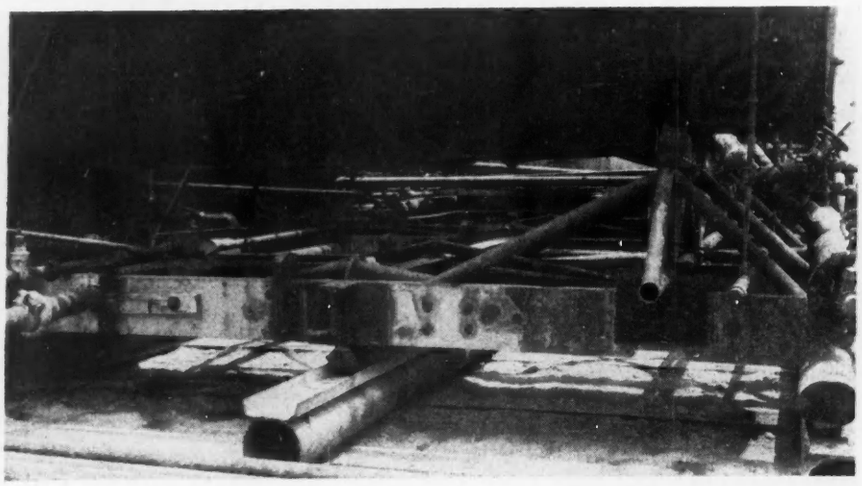
When Stanolind absorbed Dixie, he went along and was successively promoted to construction foreman and farm boss. After studying petroleum engineering for three years he was promoted to district petroleum engineer for Kansas with headquarters at Tulsa. Later he was transferred to Wewoka, Okla., and made field superintendent for the south half of the state, a position he has held for seven years. During the war he taught a number of night classes at Wewoka and Seminole on foremanship for the E.S.M.W.T. Division of the University of Oklahoma. Superintendent Crall likes flying, operates his own three-place plane, has logged more than 450 hours in the air and uses his ship to supervise drilling wells and operations in his territory.

Unitized Skids and Racks Save Time in Setting Up Boilers

Utilizing salvaged derrick steel and pipe material, one company has unitized boilers to facilitate both the moving operations and the correct spotting at the well sites. The base shown is sectionalized, being tied together with oversize flanges which are bolted together upon assembling at the boiler setting. All line connections are easily broken beneath or beside the boiler with quick-acting unions. Running laterally beneath each boiler are permanent skid bases which are spotted over matching channel-iron bases previously positioned along the ground. These channels are welded atop lengths of eight-inch pipe, the latter resting upon planking placed upon the ground.

BOILER MOUNTING

Following the laying out of the channel bases, each boiler can be placed in the correct position with the assurance that the unitized lines, steam headers, etc., will match other connections of adjoining units. The method has an advantage in that individual boiler units can be removed and replaced at any time with but a minimum of time and trouble in getting connections tied in to the existing lines.



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See Pages 2450 to 2455, Composite Catalog.

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Jack-Type Support Makes Sturdy Pipe Mounting

Steam and mud lines must be well supported throughout their length, to prevent damage through vibration and expansion. On level ground it is a simple matter to lay them on short timber blocks, and thus to maintain the desired gradient to prevent sags or bends which might serve as concentration points for stresses.

PIPE HANDLING

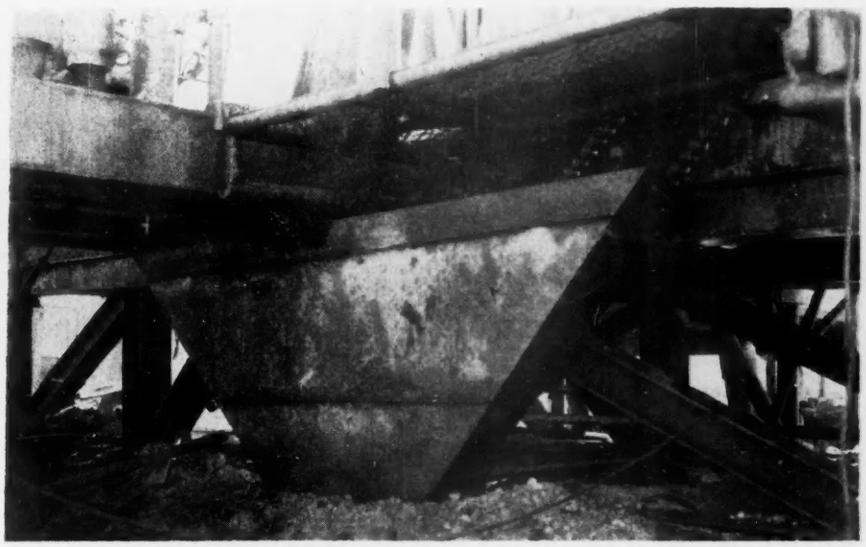
Where the ground is uneven, to carry the pipe on cribbing is to invite trouble through collapse of the unstable support. To avoid this trouble, one contractor utilizes bits of pipe, short section of 6-inch channel, and especially formed studs with extra long threaded sleeves to assembly a pipe support which may be adjusted through considerable range in height to level the main.

The supports may be alternated so that one channel iron base will parallel the line, the next to be at right angles to it, thus affording greater stability in all directions. Or, if the line be anchored at one end and it is desired to permit expansion to travel to the Ell or other fitting at the free end, all the supports may be aligned with the width of the base at right angles to the main.

A swiveled saddle, composed simply of a curved section of boiler plate with a hole at its center which rests loosely over a turned down section or stub at the upper end of the adjusting screw, fits snugly to the curve of the line being supported, and insures the unit against accidental overturning.

The supports stow readily in one of the bins when the rig is being moved, it being customary to run the adjusting thread down as far as it will go in the sleeve welded between the angle braces, so as to protect the thread from possible damage through contact with other equipment in the bin.

Sub-Floor Drive Provides Added Floor Space

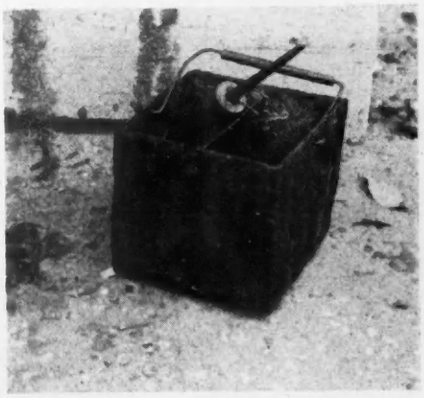


On a small drilling rig where floor space was at a premium, one operator provided a sub-floor set of sprockets to be placed between the rotary table and the power. Permanently mounted in the sub-structure framework, the sprocket assembly was housed in a V-shape metal housing which provides protection to the chain and sprocket teeth as well as a sump for lube oil.

CHAIN DRIVES

The easily moved unit has resulted in considerably improved working conditions for the men working around the rotary table, the extra floor space permitting faster work with less hazard in possibly tripping over above-floor fittings and chain guards.

Partitioned Bucket Aids Dope Handling



In the majority of instances the drilling rig dope bucket consists of a can that just happened to be handy at the time it was first needed. The container used by one crew, however, was made up by the welder especially for this purpose and its design has paid returns in increased usefulness and practicability on the rig floor.

DRILLING ACCESSORIES

It is a square, open-top can made of 12-gauge metal. Welded across a portion of the interior is a shallow, slanting shelf on which the dope brush can be laid, this being a far superior method of handling the brush as compared with that of allowing it to slump down into the fluid with ill effect on bristles and handle. A light bail having a length of ⅛-inch pipe for a handle completes the assembly. The flat square base lends stability to the bucket making it less liable to upsetting on the rig floor.

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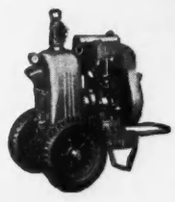

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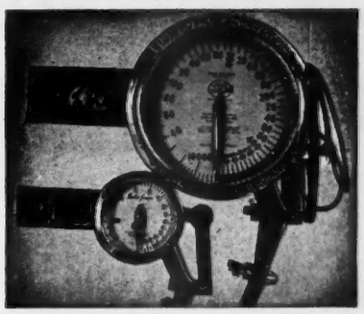

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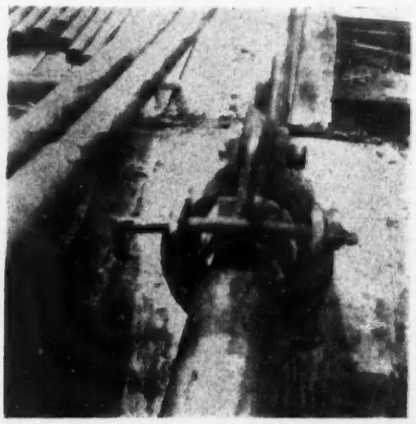
Rat Hole Elevator Pin Adds Safety Feature

CREW SAFETY

The addition of only three pieces . . . two U-bolt sections and a hinged pin . . . to the Merritt-type rat hole elevator has added a fool-proof safety feature to this piece of equipment. A major oil company found that by welding two ¾-inch U-bolts on either side of the fixed body of the rat hole elevator so that a pin, when inserted through the eyes of the U-bolts, crossed the top of the movable jaw as shown in the accompanying photograph, and thus wedging the jaw in the locked position. A hinged section on the end of a pin, ⅝ inch by 10½ inches, prevents the pin from falling out of position during rat hole operations.

The use of this device is easy and does not hinder the crew in pulling in drill pipe from the pipe platform onto the drilling rig floor. After one joint of pipe has been inserted into the rat hole, the man on the floor can place the pin back in position when the elevators have been lifted over the collar of the pipe, and thus return the elevators to the men on the pipe platform for another joint of pipe.



It is recommended that a short section of small chain be welded to the pin to prevent its loss. When this feature is added to the elevators, the cat-head operator can be reasonably sure when he pulls a joint of pipe into the derrick, that no amount of jarring or bouncing will cause the elevator to release its grip on the pipe.

Steel Funnel Provides Rat Hole Guide

RAT HOLE EQUIPMENT

In order to facilitate entry of the kelly into the rat-hole, one operator has adopted the practice of installing a large funnel device over the top of the pipe which remains just below the level of the derrick floor. Made of a short piece of casing of the next size larger than the rat-hole pipe, the funnel rests on several triangular steel lugs welded to the side of the pipe. Release of these three screws is all that is necessary to permit lifting out of the funnel when the rig is torn down for moving.

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Need not be disturbed when removing or replacing Cathead Unit — a time-saving achievement common to all GEMCO models.
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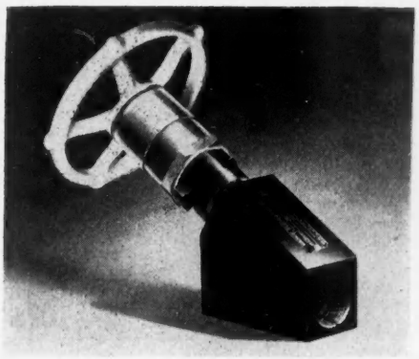
NEW EQUIPMENT LITERATURE

For additional information, use mailing card inserted opposite this page

1—Valves

Representing a marked advancement in valve design is the new Grove series "V" and "VL" valves. Extreme 30-degree valve body design in the globe pattern effects a minimum change in



the direction of flow through the valve. Likewise, turbulence is almost eliminated, as the flow stream is carried through the valve in the direction of closing. Expansion takes place directly into the downstream line after the flow has passed through the valve. Thus wire drawing and cutting action is almost entirely removed.

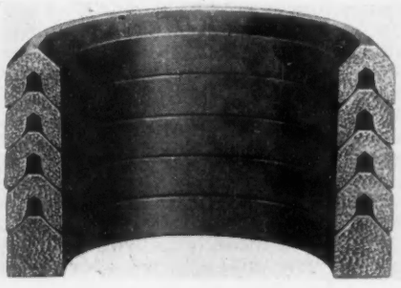
A solid one-piece stem and plug is employed to effect tight shut-off when closed. The valve stem is not directly carried by the handwheel which removes any chance of the stem becoming distorted or bent. All shocks are absorbed by a multiple full threaded section of the handwheel and yoke. All threaded surfaces and operating parts are protected from paint, dirt and damage by an encasing cap shield.

Essential operating parts of the valves are provided constant "life-time" lubrication by a special factory sealed process. This sealed lubricant is "zoned" entirely away from the flow stream and isolated from temperature effects to insure lasting permanence.

(Check item 1 on coupon for more information.)

2—Packing

A new packing gland intended to overcome weakening and splitting at the "hinge" has been introduced by Greene, Tweed & Company. Known as "Palmetto" pyramid packing, this new product is available in molded ring form



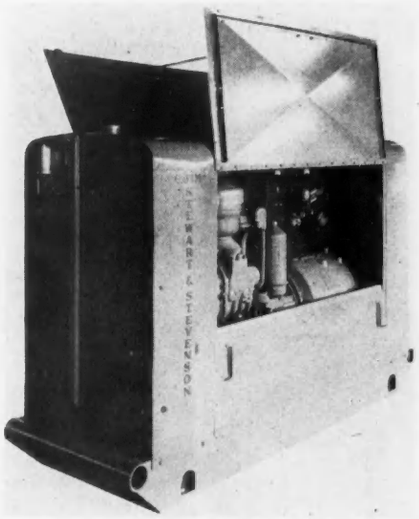
and made to exact dimensions. The cutaway illustration shows the method of assembly inside the stuffing box. These packings may be used, according to the manufacturers, in any stuffing box, for rotary as well as reciprocal action.

Sets of rings can be supplied in styles and grades to withstand oil, water and steam at any pressure and temperatures up to 600° F. The bottom ring is installed first and receives the full impact of the pressure on the power stroke. This bottom ring expands the wedge-shaped lip of each ring above it so that the packing is pressed against both the rod and side walls. Binding is prevented by infiltration of fluid between the rings and storage of fluid in the arrowhead reservoir. The curved design of the interior lip surface permits ease in operation and prevents friction within the packing. No special adapter ring is required since the top ring has a flat top surface and 45-degree angle surfaces that accommodate any standard shape gland-follower.

(Check item 2 on coupon for more information.)

3—Lighting Plants

Stewart & Stevenson Services are producing rig lighting plants designed to furnish current for oil field rigs. These rig plants are powered either by General Motors diesels or Continental nat-



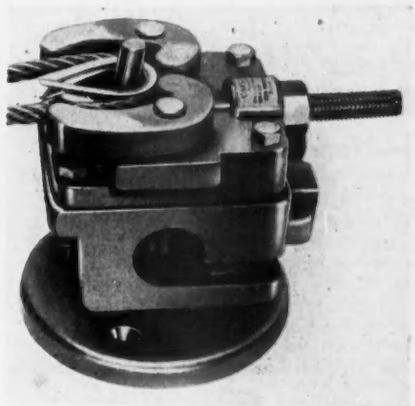
ural gas, gasoline, or butane engines.

Conservatively rated, each unit is guaranteed to be capable of operating at overloads up to 30 percent in excess of its rated capacity for intermittent periods. A weather resistant sheet-metal housing is furnished. The plants are light weight, compact, and skid-mounted for portable service. The control panel is fully enclosed, shock proof mounted to prevent damage to the meters during rough handling. Engine instruments, as well as the meters, switches, etc., for control of the generator, are mounted on this single panel.

(Check item 3 on coupon for more information.)

4—Vise

The Nunn Manufacturing Company is producing a vise which forms a loop in wire rope by simply turning one hex nut with an ordinary wrench. The vise automatically compensates for rope sizes



within its designed range and holds the loop firmly through the splicing or clamping operations.

Cabl-Vise is equipped with a swivel base that accommodates the vise in either vertical or horizontal position and rotates through 360 degrees, clamping firmly in any desired direction.

Cabl-Vise 1, illustrated, takes rope sizes ¼ through ½-inch. Cabl-Vise 2, equipped with hydraulic booster, will accommodate rope ⅝ through 1½ inches heavy duty.

(Check item 4 on coupon for more information.)

5—Motor Welder

By utilizing the inbuilt separate exciter, The Hobart Brothers Company has produced a compact, synchronous motor welder known as The Hobart electric drive welder. This unit is so proportioned that it automatically synchronizes itself by the build-up of the separate exciter. The starting current on this unit is approximately the same as a conventitnal induction motor of the same horsepower capacity.

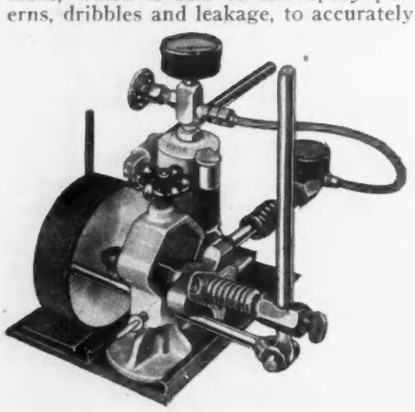
Welding loads with their high horsepower demands and low duty cycle have long been a problem to public utility companies, and according to the manufacturers, this welding unit with its

unity or leading power factor characteristic makes it a power saving load, both from the standpoint of the public utility company and the customer. The motor is a Hobart revolving field synchronous type and is furnished with a heavy squirrel cage winding to make easy starting as in a conventional induction motor. Once up to speed, the exciter builds up and automatically applies correct excitation to the motor fields. This unit also can be used as an AC generator for the operation of small tools, grinders, lathes, etc., by coupling the shaft to a gasoline or electric motor, in which case the synchronous motor becomes an AC generator.

(Check item 5 on coupon for more information.)

6—Nozzle Tester

The Buda Company is producing a new "Universal" nozzle and injector tester set which will adequately test any conventional type of nozzle or injector used on diesel engines. No technical knowledge is necessary on the part of the operator, it is claimed, for the proper application of this precision instrument, which is said to test spray paterns, dribbles and leakage, to accurately



adjust nozzle opening pressure and detect other troubles common to nozzles and injectors.

The Buda diesel nozzle testers are heavy duty, light weight (weighing from 19 to 58 pounds), portable testing units and are equipped with all-metal carrying cases provided with slides and drawers for quick, compact storage of tester and accessories. The number of adaptors and accessories carried in the drawers varies with the type of set used. The unit is equipped with a standard hydraulic pressure gauge, either 3000 or 5000 pounds per square inch capacity. Gauges of higher capacity are available. Each testing set is furnished with complete instructions covering the use and application of the unit.

(Check item 6 on coupon for more information.)

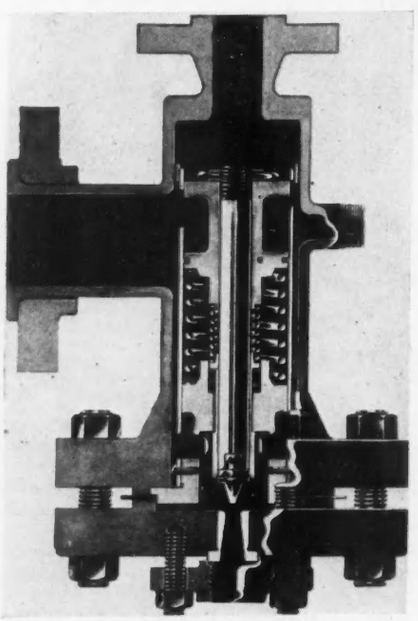
7—Extinguisher

Randolph Laboratories offers a new trigger-touch, 15-pound carbon dioxide extinguisher which the makers claim can be carried in one hand and operated with uninterrupted, single-sweep action. It has been developed for combating the sudden flammable liquid and electrical blaze which may occur in the shop, field and in drilling operations. It is said that this fire extinguisher will discharge, upon one touch of the tripper, a penetrating snowy blanket of carbon dioxide gas, which has been shown to smother an eight-quart gasoline fire in 19 seconds under official Underwriters' Laboratories' fire tests. Release of the trigger stops the gas flow. There are no valves to twist, and it is claimed that this feature saves precious seconds and reduces the chance of "operator's panic." The long-range hose and nozzle enables the operator to fight a blaze at a safe distance. Truck and wall brackets are provided for both vehicle and factory installations.

(Check item 7 on coupon for more information.)

8—Recirculating Valve

The Hammel-Dahl Company offers a recirculating valve to eliminate centrifugal pump failures resulting from insufficient flow of fluid through the pump,



causing overheating and destruction of the pump.

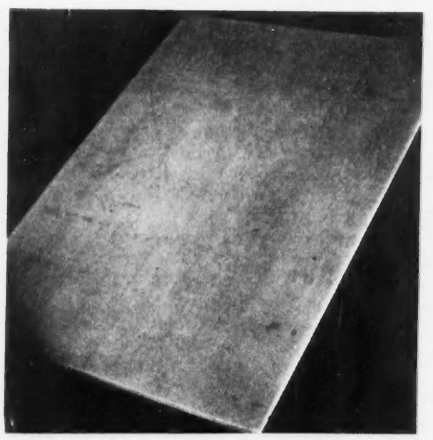
Insufficient fluid flow is said to arise from failure of fixed recirculating orifices, failure of prime mover to drive the pump at sufficiently high speed, or to restrictions in the discharge piping. The new system consists of an automatic recirculating valve operated from the fluid flow and designed to by-pass the minimum quantity of fluid required to eliminate pump overheating.

As the quantity of fluid passing through the pump increases, the by-pass quantity is automatically throttled and is reduced to zero when the output of the pump is sufficient to prevent pump failure. The manufacturers claim the valve may be installed in existing pump piping merely by removing any convenient elbow in the discharge piping upstream of all checks and stops.

(Check item 8 on coupon for more information.)

9—Plastic

A plastic material, silicone glass laminate, has been developed, tested and put in production by General Electric Company. Made of layers of glass cloth treated with a silicone resin and subjected to heat and pressure, the material is so resistant to heat that whole new



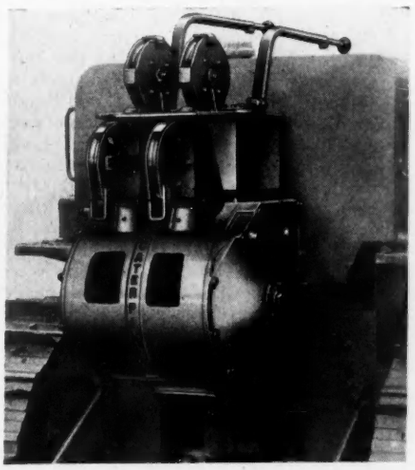
areas in the electrical insulation field may be opened, the manufacturers claim. Ordinary solder is said to melt before this new material will break down under heat. Many uses for silicone glass laminate with such heat resistance are being found in all types of electrical equipment. Other uses may include handles for arc welding electrodes and for indestructible insulating parts for devices subject to fire hazards. Although heavy for plastics, this material weighs about the same as magnesium.

(Check item 9 on coupon for more information.)

10—Cable Control

Manufacture of a new rear double drum cable control is announced by Caterpillar Tractor Company. Designated as No. 25, this unit embodies numerous refinements and features which have been designed for the heaviest service imposed on Caterpillar's line of tractors in the operation of the largest scrapers, bulldozers and rippers. It is said to be smoother in operation, with a minimum of adjustments featured in the design of the new rear cable control. The multiple disc clutch with metallic facings is the same type used for many

years in the company s track-type tractor line, and the synchronized brake release and clutch engagement is said to add to the smooth operation of the unit. According to the manufacturers, the

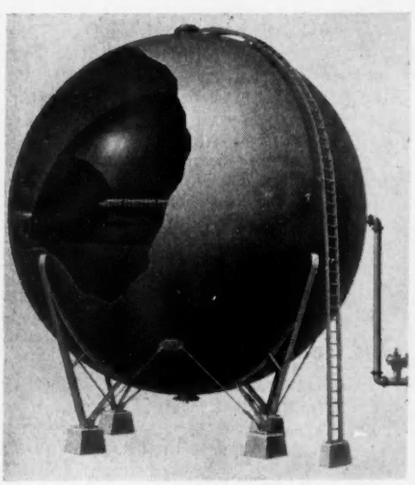


cable control has been designed to permit rapid, free spooling when desired, and resulting in quick response with a minimum effort. Outstanding features claimed include large-diameter, specially grooved sheaves; large brake capacity; longer life through use of anti-friction bearings and recessing of cable drums in the case; compact design which permits mounting close to the tractor for protection against damage; and a rugged cast steel case which assures freedom from distortion.

(Check item 10 on coupon for more information.)

11—Vaporsphere

A vaporsphere for reducing evaporation losses from flat-bottom tanks storing volatile liquids has been introduced by the Chicago Bridge & Iron Company. It is designed to prevent vapor



loss by providing temporary storage for vapor displaced by breathing. Having a capacity of 5000 cubic feet, the vaporsphere is connected to the vapor spaces of two flat-bottom tanks storing motor gasoline by six-inch light-weight vapor lines forming an effective vapor saving system. When increasing temperatures cause expansion in the tanks, the excess vapor flows through the vapor lines into the vaporsphere where it is stored temporarily.

When conditions causing its displacement have changed, the vapor returns to the tanks. Such spherical tanks also are used to prevent filling losses from pressure tanks by designing them to operate at the same pressure as the tanks and equipping the air space with a pressure regulator. It consists primarily of a spherical steel shell with a flexible hemispherical membrane on the inside. It is connected to the shell at the sphere's equator. Vapor is stored beneath the membrane and the space above it is filled with air at all times.

(Check item 11 on coupon for more information.)

12—Cement Mixer

Chain Belt Company of Milwaukee offers a new Rex end discharge 3½-sack tilting mixer. This mixer weighs 150 pounds less than the former side discharge model, making it considerably easier to hitch and spot on location. Its wheel tread has been increased to 62 inches, about the same as that of an au-

tomobile. A lower center of gravity is obtained by cradling the mixer body between the wheels, resulting in faster and safer towing. A choice of two engines is offered. Other features include an enclosed roller chain motor-drum drive; an all-welded pressed steel drum bowl; a ring gear driving the drum that can be easily replaced when wear occurs; a 24-inch control handwheel equipped with a safe ratchet-type lock; and cantilever springs and a removable tow pole.

(Check item 12 on coupon for more information.)

Literature

13—Valves

"The Valve World," Vol. XLII, No. 2, a publication by Crane Company and devoted to the development and application of valves and fittings, steam specialties, and fabricated piping, and their relation to modern industry, has been released. The standard-size 32-page pamphlet contains seven interesting articles concerning the use of valves in piping systems for industry. Of particular interest is the article, "Design of New Crane Steel Lift Check Valves," by R. Fennema, development engineer in charge of steel valve design in the valve and fitting engineering department. This treatise deals with the problems found and procedures followed in the development of a design resulting in high disc lift at low velocities.

(Check item 13 on coupon for more information.)

14—Wire Lines

"Selection and Maintenance of Wire Lines for the Oil Country" is a comprehensive, easily undesrtood, pocket-sized book of 56 pages, especially designed for use in all phases of oil field work. It considers wire lines as a part of oil field machinery, and just as machines are selected for a particular job, recommendations for selection of wire lines follow the same pattern. Construction and cross-sections of 14 classes of wire lines are presented along with specifications and engineering data. Features of each type line is discussed in the layman's language. Many easy, simple rules for the proper treatment of wire lines are given, such as spooling, inspection, proper methods of clamping, and other valuable suggestions to help lengthen the life of wire lines. The latter part of the booklet is devoted to recommendations for the size and type wire line to be used in various oil fields.

(Check item 14 on coupon for more information.)

15—Wooden Tanks

"Wood Tanks for the Petroleum Industry" is the title of a publication issued by the Santa Fe Tank & Tower Company. Bulletin E-45-1ML presents the construction details of the company's line of wooden tanks for handling corrosive liquids in the petroleum industry. Specifications from the individual staves to the construction of the concrete foundations are given. Dimensions for wooden tanks from 65 barrels to 1500 barrels capacity may be found in the eight-page standard-size bulletin.

(Check item 15 on coupon for more information.)

16—Testing Instruments

Publication of a new catalog designated as 699-G, of instruments for testing petroleum products is announced by the C. J. Tagliabue Division, Portable Products Corporation. The book lists TAG's complete line of ASTM and API hydrometers and thermometers, together with many similar instruments for miscellaneous testing and general laboratory use. The TAG closed tester and the TAG-Saybolt thermostatic viscosimeter are but two of many instruments used in making principle tests of petroleum products. Illustrations are plentiful and complete descriptions of all instruments are given.

The 44-page booklet contains other features such as conversion tables for temperature and specific gravity and an official guide to principle tests of petroleum products.

(Check item 16 on coupon for more information.)

Crude Production Hits 1946 High; Gasoline Stocks at Five-Month Low

New high levels for the year were reached by crude production and crude runs to stills during the week ended May 25, while gasoline stocks dropped to a new five-month low.

The week's production of gasoline and residual fuel oil increased over the previous week's, but the output of distillate fuel showed some decline. Additions of well over 2 million barrels were made to the combined stocks of the burning oils, resulting in a new year's high for residual fuel stocks. These trends were revealed by The American Petroleum Institute in its latest weekly report.

Crude production in the U. S. averaged 4,759,000 barrels daily during the week end May 25, which is 8000 barrels a day more than was produced during the previous week, but 108,000 barrels less than the daily average of the comparable week of last year. The highest production allowable ever set in Texas has been made for June and may result in crude production nearing or even surpassing the all-time peak set in 1945.

Crude runs to stills averaged 4,857,000 barrels daily during the week to set a new mark for the year. These daily runs represent an increase of 101,000 barrels over last week's, but 139,000 barrels, or 2.8 percent, less than the daily runs of last year's week.

Stocks of refinable crude amounted to 222,113,000 barrels on May 18, as reported by the U. S. Bureau of Mines. This report shows that crude stocks were increased 498,000 barrels during the preceding seven days, and that they amounted to 252,000 barrels more than were on hand May 19 of last year.

Gasoline production, which includes blends of natural gasoline at the refineries, amounted to 14,322,000 barrels for the week, an increase of 124,000 barrels over the output of the previous week, but 930,000 barrels less than was produced during the comparable seven days of 1945. Stocks of finished and unfinished gasoline are now at their lowest level for 1946 and stand at 95,769,000 barrels, after withdrawals totaling 1,281,000 barrels were made during the week. These current gasoline stocks exceed those held a year ago by 7,408,000 barrels.

Distillate fuel oil production totaled 5,463,000 barrels for the week, a cutback of 132,000 barrels from last week, and 647,000 barrels more than was produced during the corresponding period of 1945. Distillate fuel stocks continued to accumulate, as 787,000 barrels were added during the seven-day period, bringing them to 32,973,000 barrels, which is 3,727,000 barrels more than were held one year ago.

Residual fuel oil output climbed 488,000 barrels during the week to 8,908,000 barrels, a decrease of 624,000 barrels from the production of last year's comparable period. Residual stocks were upped 1,493,000 barrels and ended the week at 43,368,000 barrels, a new high mark for the current year. This current figure is 4,477,000 barrels greater than the 38,891,000 barrels of the heavy fuel oil on hand May 26 of last year.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	47,861	11-14	95,857	1- 8
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	47,187	11-27	72,881	1- 2
1944	4,762	9-30	4,798	12-30	[2]40,992	1- 1	89,162	4- 1	48,162	10-28	64,744	10- 7
1945	[1]4,944	7-14	[1]5,140	8-18	227,554	10-13	99,012	3-24	45,341	11-17	56,074	1- 6
1946	4,759	5-25	4,857	5-25	229,430	3- 2	105,233	2-16	35,199	1- 5	43,368	5-25
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 3
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-13
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-18	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	220,258	9- 9	76,302	1- 1	30,232	4-19	49,737	3-18
1945	3,621	10- 6	3,409	10- 6	[4]211,813	8-25	70,791	10-13	26,483	3-17	38,548	5-26
1946	4,403	3- 9	4,498	1-12	218,193	1- 5	95,769	5-25	25,131	3- 9	37,289	4- 6

TRENDS OF 1945 AND 1946

Trends in Week Ended	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,561	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 25	4,982	4,931	[4]211,813	15,986	84,693	4,960	39,782	9,356	46,201
September 29	4,357	3,812	222,387	11,913	79,552	3,940	43,689	7,047	46,853
October 27	4,273	4,838	224,230	15,530	74,335	5,159	43,472	8,691	45,943
November 24	4,469	4,648	219,363	15,681	83,184	4,802	45,258	8,800	47,474
December 29	4,474	4,729	218,918	14,546	95,205	5,055	36,651	8,765	42,447
1946:									
January 5	4,548	4,651	218,193	14,488	98,494	5,293	35,199	8,867	42,371
January 26	4,626	4,553	220,544	13,622	101,737	5,720	29,498	8,411	39,722
February 23	4,714	4,595	226,699	13,175	104,709	5,728	25,398	7,913	39,290
March 30	4,425	4,684	224,994	13,896	104,715	5,357	28,240	8,738	37,746
April 27	4,672	4,685	224,443	14,228	99,631	5,568	30,466	9,204	39,404
May 4	4,721	4,672	221,911	13,889	98,548	5,313	31,487	9,010	40,212
May 11	4,734	4,820	221,615	13,903	98,158	5,422	31,736	8,724	41,008
May 18	4,751	4,756	222,113	14,198	97,050	5,595	32,186	8,420	41,875
May 25, 1946	**4,759**	**4,857**	.....	**14,322**	**95,769**	**5,463**	**32,973**	**8,908**	**43,368**
May 26, 1945	4,867	4,996	[5]221,861	15,252	88,361	4,816	29,246	9,532	38,891
Change:									
In Week	+8	+101	+498	+124	—1,281	—132	+787	+488	+1,493
In Year	—108	—139	+252	—930	+7,408	+647	+3,727	—624	+4,477
In Year	—2.2%	—2.8%	+0.1%	—6.1%	+8.4%	+13.4%	+12.7%	—6.5%	+11.5%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922 due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, May 19, 1945.

Purchases Discontinued

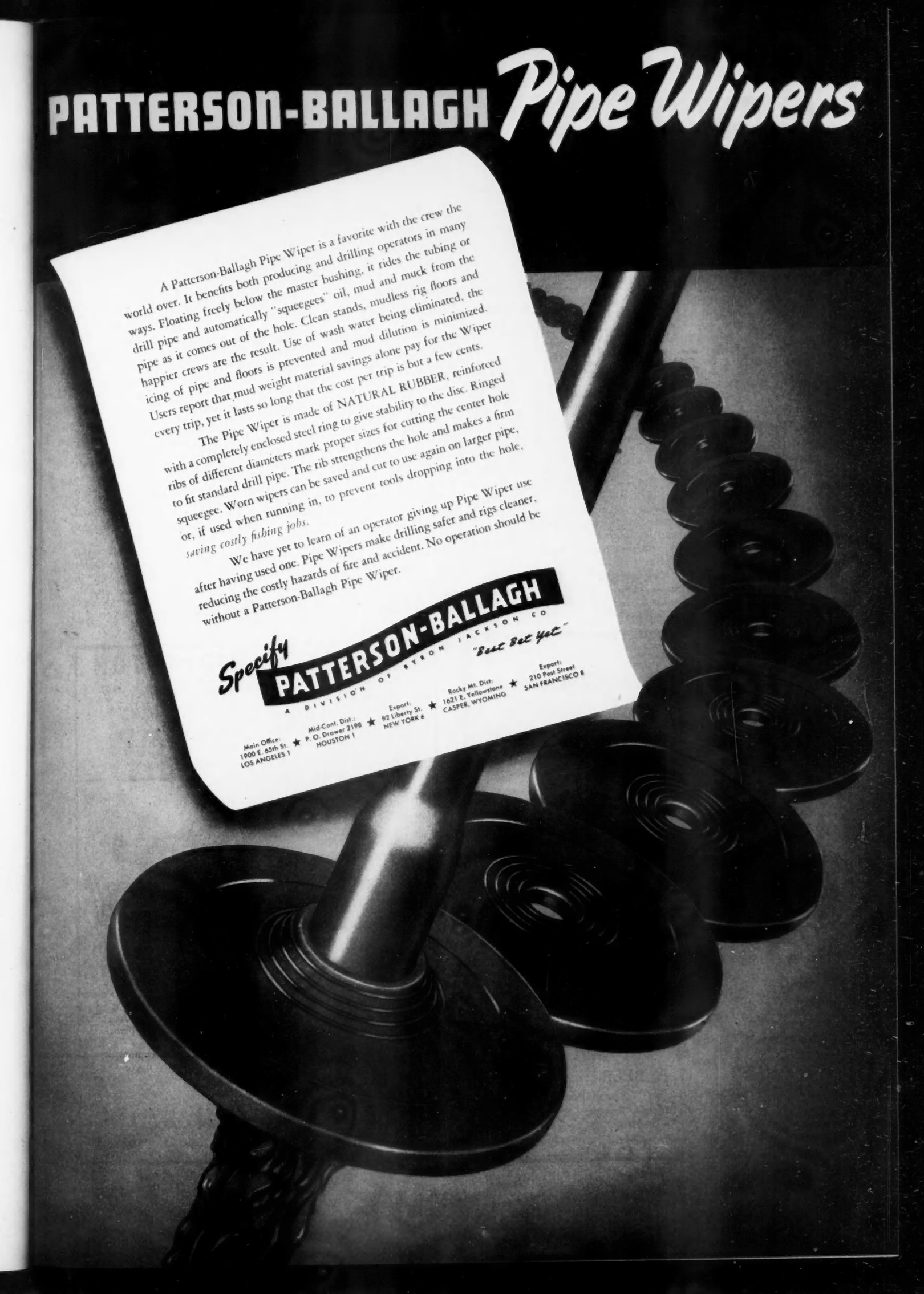
The Oklahoma Natural Gas Company has discontinued purchase of gas in the Chickasha-Charlson zone of Grady County and the West Cement-Medrano zone of Caddo County, it notified the State Corporation Commission. During summer months—period of low consumption—the company will concentrate on the gathering of "distress" gas in oil fields, and run to underground storage all gas in excess of current demand. The company's position was revealed when it intervened at the market demand hearing to ask that the Commission carry forward all so-called underproduced gas in these fields. The plea was granted.

Oil, Gas Charts Issued

The Tennessee Division of Geology of the Department of Conservation, in cooperation with the U. S. Geological Survey, has released Oil and Gas Investigations Chart 3. This chart, approximately 32 x 28 inches, describes the subsurface stratigraphy and structure of the Stones River rocks in all or parts of 20 counties in northeastern Central Tennessee.

Copies may be obtained from the Tennessee Division of Geology, G-5 State Office Bldg., Nashville 3, for 50 cents.

PATTERSON-BALLAGH *Pipe Wipers*



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Moore Becomes Ohio Board Member to Succeed Fleming

O. F. Moore, vice president and manager of The Ohio Oil Company's pipe line department, was elected a member of the board of directors May 23 to succeed W. W. Fleming, who resigned because of ill health.

Fleming was also manager of the Tulsa Division, and had served 36 years with the company. He started as a roustabout in the oil fields of Ohio, Illinois and Indiana, and was elected a director in 1922. In 1936 he was named vice president in charge of Mid-Continent operations.

Glenn F. Bish, division manager of Ohio's Grand Rapids, Mich., headquarters, replaces Fleming at Tulsa.

Moore, only new member of the board of directors, joined the company in 1909 as a cashier, and served in various capacities until 1916, when he became assistant secretary of the Illinois Pipe Line Company. He was subsequently elected a director and secretary of that company, and finally a vice president, which position he held until the company was dissolved in 1942. At that time he became assistant secretary of The Ohio Oil Company and vice president and secretary of the Illinois Pipe Line Company of Texas. He was elected vice president of Ohio and manager of the pipe line department in February, 1946.

James D. Wheeler, formerly chief petroleum engineer for Ohio, has been promoted to division manager at Grand Rapids.

Panhandle Eastern Prepares To Extend Its Gas Facilities

Panhandle Eastern Pipe Line Company, a major gas purchaser in the Hugoton and Panhandle areas of Kansas and Oklahoma is apparently getting squared away to extend its facilities to serve a greater market in the middle West. The Federal Power Commission has indicated it will approve plans for a $6,216,000 construction program, which will increase the line capacity by 10 million cubic feet, part of which is scheduled for the Detroit market.

The company expected to have a peak demand of 403 million cubic feet daily next year, the FPC was informed.

The Kansas Corporation Commission recently granted an extension until November 1, exempting Panhandle from the basic "shut-in" requirements for over-produced wells in the Hugoton field. It held that gas transported by Panhandle for sale in the midwest is "vital to the postwar reconversion program" and that the company "is proceeding with all possible dispatch in the drilling of additional wells and the connection of additional wells to use its pipe line system through gas purchase contracts."

The company has connections to 163 Hugoton wells as of March 1, and plans to add an additional 52 wells—29 company-owned, one joint-ownership and 22 through purchase connections, the Commission said.

Two USGS Maps

A map of oil-bearing formations in Mississippi and Alabama, Preliminary Chart 20, which traces the cretaceous formations that produce oil in the former state into west-central Alabama into areas where oil possibilities have not been tested has been issued by the U. S. Geological Survey and may be purchased from the survey in Washington at 30 cents each.

Preliminary Map 52, showing the stratigraphic relationships of the upper formations of the Arbuckle group in northeastern Oklahoma and southeastern Kansas may be had at 60 cents each from Washington, Tulsa or Denver.

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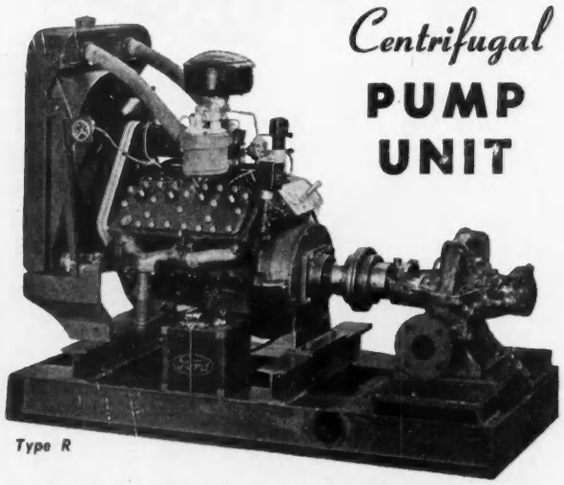

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NEW ORLEANS HOUSTON DALLAS

☆ Oklahoma

Rogers County's West Inola Area Yields New Shallow Pool

Shallow oil pool tapped in West Inola area; Chitwood discovery showing for gas-condensate producer; Coon Creek, Northeast Arcadia pools may be united; deepening of exhausted gasser to revive old Okfuskee County area; new field opened in Kingfisher County; Hunton lime pool opener still making good flow; new pay zone found in Garber field.

Rogers County: A shallow oil pool of major proportions, 25 miles east of Tulsa in the West Inola pool area, is believed to exist by many oil producers. A month ago C. P. Quinlin opened the area with Martin 1, SE SE SE 25-19n-16e, which showed for both gas and oil at around 420 to 440 feet. The Martin 2, NE SE SE 25-19n-16e, is reported showing for a good well, and is making more gas than the discovery well. Operators believe that when properly choked down to allow the oil to come in, it will flow steadily. Bartlesville sand was topped at 420 feet, with total depth 450 feet.

Grady County: Magnolia Petroleum Company's deep Chitwood area well near Alex in Grady County appears to be showing for a gas-condensate producer. It is the Britt Unit 1, SE NE SW 3-4n-16w, which is still being tested. After plugging back to 11,007 feet, casing was perforated at 10,408-37 feet with 90 shots and at 10,959-92 feet with 96 shots. After washing hole the well showed for an estimated 17 million cubic feet of wet gas a day, flowing through open tubing with tubing pressure 400 pounds and casing pressure 410 pounds.

Oklahoma County: With the Coon Creek area of central Oklahoma extended more than ¾ mile southward by A. R. Jordan et al's Dulaney 1, SE NE SW 3-14n-1w, it is highly possible that the Coon Creek and Northeast Arcadia pools eventually will be united. The Dulaney, drilled to the second Wilcox sand at 5922-51 feet, headed up and flowed 460 barrels of oil in a 12-hour period after set plug was drilled out. Five and a half-inch pipe was set on top of the pay, and flowing through 1-inch tubing chokes, the well at the end of a 41-hour period produced about 1247 barrels of crude. The well is due south of Sinclair Prairie Oil Company et al's Sexauer 1, Coon Creek discovery.

Okfuskee County: Highly promising is W. A. Fleming et al's Powell 1, CNW SW 30-10n-12e, Gregory pool near the Southwest Weleetka area. Originally called the "W. B. Wells et al," the test was an old Gilcrease sand gasser at 2660-70 feet. It was cleaned out and deepened when the gas was exhausted, and the Wapanucka-Cromwell was found at 2985 feet. With five-inch casing on top of the sand, it drilled out to 3025 feet and got an 800-foot natural fill-up with oil. The crew swabbed 20 to 25 barrels of oil a day natural, and will deepen a few feet, then acidize.

Kingfisher County: A new field has been opened northeast of Kingfisher by J. A. King and associates. The Lankhard 1, NE NE SE 34-17n-6w, drilled at 8334 feet and abandoned several years ago, was taken over by King and redrilled to 7717 feet. Pipe was set at 7649 feet. Cement was drilled out to 7649 feet and casing perforated at 7552-75 feet in the Misener-Hunton zone. On test the wildcat showed a little oil and gas. After treatment with acid and nitro shots, there were 2000 feet of fluid, virtually all oil, in the hole, with some gas fogging. Tanks were being connected at the pool opener for further tests.

McClain County: The Carter Oil Company's Thompson 1, C NE SE 36-8n-4w, Hunton lime pool opener, is continuing to make good showings and production tests. The well flowed 380 barrels of oil in 18½ hours through ¼-inch variable choke, and then flowed 171 barrels of oil in 3 hours through ½-inch positive choke. Total depth is 10,592 feet, plugged back to 10,070 feet.

Garfield County: The first production in the New Garber field from the second Wilcox sand, thus opening a new producing horizon for the area, was from Cities Service Oil Company's Carl Ford 2, SE SW SW 31-23n-3w. A drill-stem test showed production estimated at 40 barrels of oil an hour at 5122-80 feet. A test of the first Wilcox at 5011-82 feet showed 6,500,000 feet of gas a day.

☆ Kansas

Abandoned McPherson County Test May Open Oil, Gas Pool

Abandoned wildcat may open oil, gas pool; Ford County wildcat to be deepened to Arbuckle; 12th pool opener of year given potential; Saline County gets new oil pool.

McPherson County: A wildcat drilled a year ago to the Viola lime and abandoned as a dry hole, apparently has opened up a new oil and gas pool in eastern McPherson County. The well, J. M. Huber Corporation et al's Sinclair 1, SW 25-19s-1w, a mile north of the Bitikofer pool and 2 miles southeast of Canton, is now producing from Chat

Wells Completed in the United States in Week Ended June 1, 1946

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second or third issue of each month. More detailed data on wildcats published in third or fourth issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	1	7	19
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Arkansas	....	....	....	1	1	....	....	....	1	1	2	4	71	68
California	26	....	....	....	26	1	....	....	5	5	32	38	781	873
Colorado	2	....	....	....	2	....	....	....	....	....	2	2	48	11
Florida	....	....	....	....	....	....	....	....	....	....	....	....	8	8
Georgia	....	....	....	....	....	....	....	....	....	....	....	1	2	3
Illinois	24	....	....	9	33	....	2	....	9	11	44	41	930	671
Indiana	3	....	....	3	6	....	....	....	....	....	6	7	153	116
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Kansas	23	4	....	9	36	1	2	....	1	3	40	37	842	636
Kentucky	4	2	....	3	9	....	....	....	2	2	11	11	227	183
Louisiana	11	1	....	9	21	....	4	....	2	6	27	23	547	403
North Louisiana	7	1	....	2	10	....	1	....	2	3	13	14	285	125
South Louisiana	4	....	....	7	11	....	3	....	....	3	14	9	262	278
Michigan	7	2	4	3	16	....	....	2	7	9	25	20	304	308
Mississippi	3	....	....	2	5	....	....	....	....	....	5	3	94	158
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	10	16
Montana	....	....	....	1	1	....	....	....	....	....	1	11	93	75
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	2
New Mexico	2	7	....	7	16	....	1	....	....	1	17	7	166	194
New York	15	....	10	....	25	....	....	....	....	....	25	25	467	407
Ohio	....	....	....	....	....	....	....	....	....	....	....	18	396	338
Oklahoma	14	6	1	7	28	3	....	1	3	4	35	61	1,037	952
Oregon	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Pennsylvania	27	....	15	....	42	....	....	....	....	....	42	54	1,242	1,176
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	2	2
Texas	79	3	....	33	115	5	8	....	30	38	158	159	3,350	3,002
E.Tex.Bor. Co.'s	....	....	....	....	....	....	....	....	....	....	....	2	65	32
Rest of E. Texas	5	....	....	....	5	....	....	....	1	1	6	14	226	87
North Texas	28	....	....	18	46	1	1	....	5	6	53	54	985	671
W. Central Tex.	5	2	....	4	11	1	1	....	6	7	19	6	251	191
West Texas	16	....	....	1	17	....	....	....	4	4	21	29	680	794
Tex. Panhandle	3	1	....	2	6	1	....	....	....	....	7	8	175	246
G. Coast, Upper	5	....	....	3	8	....	2	....	6	8	16	11	290	300
G. Coast, Lower	15	....	....	3	18	2	4	....	4	8	28	25	453	432
Southwest Texas	1	....	....	2	3	....	....	....	1	1	4	8	164	211
S. Central Texas	1	....	....	....	1	....	....	....	3	3	4	2	61	38
Utah	....	....	....	....	....	....	....	....	....	....	....	....	2	....
Washington	....	....	....	....	....	....	....	....	....	....	....	1	1	....
West Virginia	....	....	....	....	....	....	....	....	....	....	....	10	286	315
Wyoming	5	1	....	1	7	....	1	....	....	1	8	2	65	60
Total U. S.	245	26	30	88	389	10	18	3	60	81	480	537	11,133	9,990

* Includes distillate wells. † Includes salt water disposal wells.

at 2890 feet. Chat was not tested when the well was drilled previously. Two McPherson operators, Tas Williams and George Hess, acquired the old lease and arranged with Huber to test the Chat. The well was reported making several million cubic feet of gas a day and spraying oil. No gauge was made. Tanks are being moved in and a production test will be made as soon as they are erected.

Ford County: Ed M. Swearer's Brown 1 in SW SW SW 4-26s-23w, 8 miles northeast of Dodge City, temporarily abandoned when the Fort Riley sandy lime below 2700 feet failed to show, will deepen to the Arbuckle lime. Swearer plans wildcats in 4 other counties in the southwestern Kansas region. Operators still believe the area will produce.

Stafford County: Kansas' 12th new pool opener for the year, Cities Service Oil Company's Kipp 1, NE NE NE 23-25s-14w, has been given a drawdown potential of 1260 barrels of 32.2-gravity oil. Production is from the Kansas City-Lansing from 3844-63 feet. Total depth is 3961 feet.

Saline County: W. J. Page, L. Walker and associates have a new oil pool at the Hagg 1, NW SW SE 32-14s-2w. The well is 2½ miles southeast of the Salina pool, and continued tests show it is producing 105 barrels of oil and 45 of water daily on pump from the Viola lime at 3246-52 feet. Total depth is 3252 feet. Efforts to exhaust the water, however, have failed.

Oklahoma Allowable Set

The Oklahoma daily crude allowable for June has been set at 380,000 barrels a day, the figure recommended by the U. S. Bureau of Mines, it was announced by the Oklahoma Corporation Commission. This is an increase of 10,000 barrels over the May figure. The Kansas Corporation Commission May 28 increased its June oil allocation 10,000 barrels to 260,000 barrels daily. The state averaged 270,150 barrels daily in the week just ended.

☆ New Mexico

Cass Field, Lea County, Given Third Oil Pay by Continental

Third oil pay given the Cass field, Lea County; Ellenburger pay in Brunson field will rival the Hobbs area in crude recovery; West Roberts and Maljamar fields may be united.

Lea County: Continental Oil Company et al's Skaggs 4-B-23, C SW SE 23-20s-37e, southeast offset to 7700-foot Pennsylvanian production in the Cass field and a failure in this zone established an intermediate pay in flowing 111 barrels of 37-gravity oil initial on gas lift. This production is from perforations at 6760-6830 feet in the Yeso (Clear Fork), topped at 6310 feet. Nearest production from this zone is 9 miles southeast.

Repolo Oil Company's Brunson 4, SW SE 4-22s-37e, became the seventh producer and extended Ellenburger production a location north in the Brunson field with a natural potential of 952 barrels of 42-gravity sweet crude through ½-inch choke from perforations at 7735-7870 feet. This well is credited with logging 250 feet of broken pay before reaching granite at 7880 feet. This and other high structure wells in the area are expected to exceed the 1 million-barrel mark in crude recovery, thus rivaling the Hobbs field, which has 15 wells that have exceeded 1 million barrels. Repolo has started a north offset.

C. W. Boller-Rutledge & Nichols' Iles 1, C NE NW 10-17s-32e, a mile west of the West Roberts field and 1½ miles northeast of the Maljamar field, flowed 256 barrels of oil natural on preliminary test of the Grayburg lime at 3967-98 feet.

☆ West Texas

Ector County Deep Prospect Has Second Promising Oil Horizon

Ector County deep prospect has second promising oil horizon; Devonian discovery trying to exclude water; Sutton County gas strike exceeds early estimate; pipe shortage retards deep drilling in Keystone field, but TXL field operators expanding work.

Ector County: Cities Service Oil Company's Parker-Wentz 1, ¾ mile southwest of the Harper field, showed sufficient oil and gas from the Silurian, topped at 11,145 feet, to make certain the setting of pipe for a production test. Gas showing in the Devonian, entered at 10,320 feet, is an added incentive. This wildcat recovered oil and gas-cut mud and headed briefly while pulling drill pipe after incomplete test at 11,387-468 feet. A second test at 11,373-506 feet confirmed the showing. It is 6 miles northeast of the Penwell field's Ellenburger discovery, and correlates 3041 feet low on the Devonian and 3573 feet low on the Silurian.

John W. Murchison et al's T. P. Land Trust-Texaco 1, 3½ miles south by west of the TXL field, was slated to be plugged back again, having swabbed 7 barrels of fluid hourly, averaging 50 percent oil and the balance salt water, when plugged back from 8566 feet to 8555 feet. No water was indicated on preliminary test.

Phillips Petroleum Company et al's Eidson-Scharbauer Unit 1, Ellenburger discovery for the Penwell field that developed water shortly after completion from perforations at 8920-50 feet, is being reworked. New perforations at 8960-70 feet failed to take acid under 4000 pounds pressure, and a further attempt will be made to squeeze cement below 8950 feet before perforating opposite the effective pay.

Amerada Petroleum Corporation's T. P. Land Trust 2-B, near C SW NE T&P Ry. 17 and on the border line of Devonian and Ellenburger production in the TXL field, registered a potential of 2062 barrels of 42.3-gravity oil, with gas-oil ratio of 972/1, through ½-inch choke from Ellenburger perforations at 9784-9840 feet. The west offset is a small Devonian well due to the top of the section being eroded. The TXL field continues to be one of the most active drilling centers in the Southwest, having 31 drilling tests, and 5 wells in process of completion.

The Texas Company's T.P.-Fraser 1-F, 2 miles north of the TXL field, entered the McKee sand of the Simpson at 9248 feet, and was drilling at 9510 feet. It is about 170 feet low to nearest producer, but is substantially higher than a failure to the southwest. A thin-pay producer from the Ellenburger is anticipated.

Andrews County: Shell Oil Company's Nelson-Humble 1, which passed up a small oil flow from Ellenburger open hole at 10,384-488 feet then deepened to determine thickness of the zone, was drilling dry granite wash at 10,605 feet. The company's Pinson-Humble 1, ¾ mile southwest, was drilling at 5950 feet. Humble Oil & Refining Company's Gaines 1, 4½ miles north by west of the Nelson-Humble discovery, was drilling shale at 8290 feet, while its Sims 1, deepened wildcat, was drilling shale at 10,265 feet.

Stanolind Oil & Gas Company's University 4-O, ¾ mile northwest of the single Ellenburger producer in the Fullerton-Devonian field, flowed 617 barrels of 41.5-gravity oil natural through ¼-inch choke from Devonian perforations at 8420-8515 feet. This well tested water in the Ellenburger at 10,625-657 feet.

Sutton County: Shell's Duke Wilson 1, C NW SE TW&NG Ry. 38, Block B-14, and 20 miles south by west of a wildcat gasser, nearest production, registered a potential of 9,270,000 cubic feet of dry gas daily. This production is from Strawn perforations at 4195-4215 feet and 4220-45 feet. Wilson 1 was drilled through the Ellenburger, entered at 4790 feet, to the Hickory (Cambrian) sand at 6170 feet, then plugged back. No market is available for the gas, but the strike may encourage further explorations in the general area, which has been leased by large companies.

Hudspeth County: Albert R. Jones et al's Mowry 1, NE SE T&P Ry. 36, Block 70, Twp. 2, and on a 18,678-acre lease, is slated to be abandoned after testing dry in perforations at 3018-67 feet in the Devonian, topped at 2969 feet. This wildcat entered the Pennsylvanian at 2122 feet, and was credited with nominal oil staining in the Devonian. The Silurian and 3 Ordovician zones were encountered in drilling to 4519 feet, thus establishing the presence of the same geological formations on the west side of the Delaware Basin that have contributed major crude reserves in the Permian Basin.

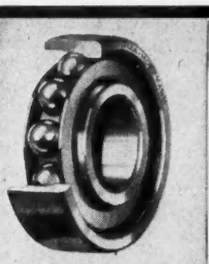
Reeves County: Argo Oil Corporation's Dora Roberts 1, 21 miles northwest of nearest production and an indicated small flowing producer from the 10,700-foot Basal Permian, was drilling lime and shale at 10,984 feet. Four cores taken above recovered lime, sand and shale with nominal show of gas. No water has been encountered since logging first oil staining at 9941 feet.

Winkler County: The Pure Oil Company's Cowden 1, west offset to the 4800-foot Holt discovery for the Emperor field, was perforating higher after testing sulphur water from perforations at 4827-32 feet. The Holt was entered at 4784 feet, or 29 feet low.

Stanolind and WestBrook-Thompson Holding Corporation's Hendrick 35-A, first pre-Permian test for the Hendrick field, resumed drilling after a drill-stem test at 11,416-466 feet yielded 360 feet of rotary mud and 8105 feet of sulphur water from the Silurian. In excess of $100,000 dry-hole contributions by nearby lease owners will be collected when the 11,500-foot level is reached.

Hunt Oil Company's Hill-Gulf 1, 1⅝ miles east of the Weiner field and prospective producer in the Tubb (Clear

PRECISION BEARINGS



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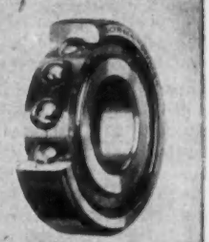

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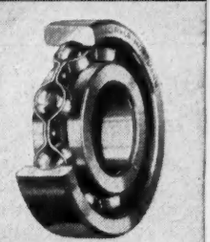

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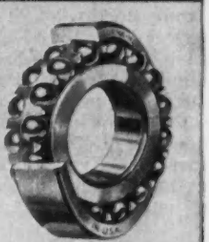

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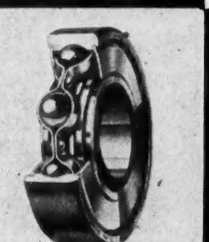

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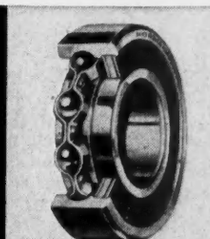

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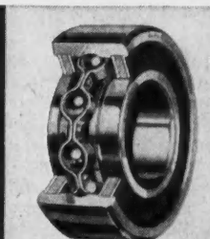

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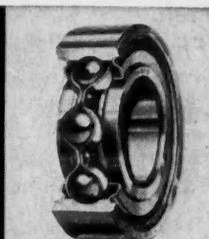

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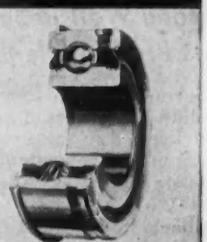

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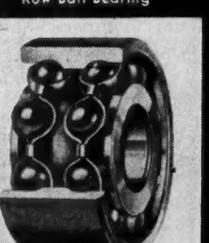
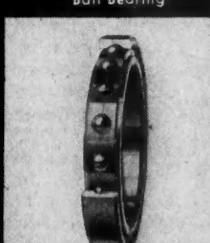
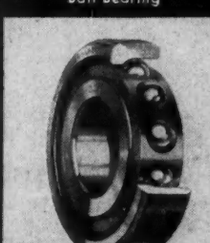


Double Row Ball Bearing



Extra Light Type Ball Bearing



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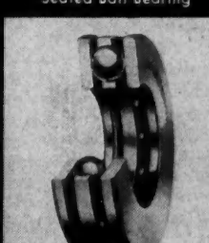
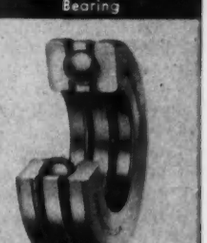


Extra Light Single Direction Ball Thrust Bearing



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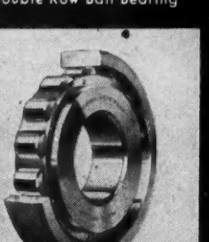
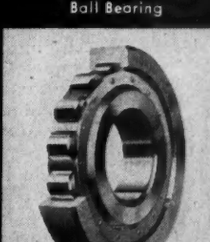
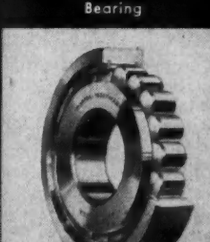


Standard Cylindrical Roller Bearing



Type "E" Cylindrical Roller Bearing



Full Type (Retainerless) Cylindrical Roller Bearing

Extra Light Cylindrical Roller Bearing

Two-Lipped Cylindrical Roller Bearing

Fork), topped at 6076 feet, was drilling dry lime 7140 feet. Substantial dry-hole contributions by nearby lease owners require an 8000-foot test.

Development of the prolific Ellenburger horizon in the Keystone area is lagging due to inability of some of the operators to procure casing. Currently there are 21 drilling tests, and 3 additional in process of completion, including Amon Carter and Pure's Walton 2-C, the discovery that is being deepened from 9655 feet to balance gas-oil ratio. Eight companies and operators have production, and Stanolind is due to be added to the list, having started 2 tests that offset production.

Gaines County: Amerada's Jones 1-B, ½ mile west of its Jones Ranch field discovery and 148 feet low, flowed 459 barrels of 43.3-gravity oil, with gas-oil ratio 314/1, on potential test through ¾-inch choke from Devonian perforations at 11,350-11,395 feet, having plugged back from 11,455 feet. Stanolind completed its 4-inch line into the 3-well area, and began running oil June 1.

Midland County: Humble's Crespi 1, ¾ mile northwest of its Midland field discovery in the 11,390-foot Pennsylvanian, failed to indicate production on preliminary test after using 2000 gallons of acid through perforations at 11,420-450 feet and 11,470-540 feet in Devonian, topped at 11,400 feet. Swabbing will be continued. A producer would replace the Jones Ranch field as the deepest in the district.

☆Central West Texas

Second Well in Sanders Field Has Prolific Ellenburger Flow

Second well in Sanders field makes prolific flow from the Ellenburger; Shackelford County wildcat passes up small producer in Bend to explore lower zones; oil discovery pending in Coleman County.

Shackelford County: R. H. Roark et al's Sanders 1, southwest offset to the Sanders-Ellenburger field opened by the Allied Oil Company et al last March, blew in while drilling plugs from casing cemented on bottom at 4541 feet and flowed at a rate of 80 barrels of oil hourly on brief test. The well later gauged 14 barrels hourly for 12 hours through 10/64-inch choke. The Ellenburger was entered at 4523 feet, or 11 feet low, and showed for a flowing producer on drill-stem test before setting pipe. The Mississippian may provide an upper pay for the area, as the discovery showed considerable oil and gas in drilling the 100 foot section, topped at 4424 feet.

Allied & Fox's Moberly 1, northeast offset to the discovery, was drilling at 3610 feet, and the partnership will drill Sanders 1-B as a southeast offset to the discovery.

Roeser-Pendleton, Inc.'s Lee-Shell 1-B between shallow pools and 3 miles southwest of Albany, was deepening to the Ellenburger after indicating a small pumper from the Bend at 4464-72 feet.

Stephens County: W. R. Skeen et al's Hatchett 2, southeast offset to the discovery for the Eolian-Hatchett field, flowed 197 barrels of 44-gravity oil initial through 10/64-inch choke from perforations at 4213-15 feet in Ellenburger, topper at 4200 feet. Skeen et al are starting 2 tests east of the discovery.

Coleman County: Fulwiler-Hughes and Allied Oil Company's Templeton 2, northeast offset to their flowing discovery 1⅓ miles northwest of Silver Valley, was cleaning out after nitro shot in the gray (Strawn) sand at 3498 feet. A pumper is assured as the well filled 1000 feet with oil before the shot.

Stewart Oil Company's Burroughs 1, NW NW NW HT&B Railway 4 and 5400 feet northeast of the Templeton strike, was testing the Jennings sand at 3144-64 feet, having plugged back from 3487 feet.

☆ North Texas

Two Montague County Wildcats Are Nearing Decisive Stage

Fifth well in district's single Viola lime field is largest; Montague County has 2 wildcats nearing decisive stage; Sivels Bend field expanded to the southeast.

Montague County: Continental Oil Company's Patty 1, northeast edge of the McNutt field, which is the only Viola lime producing area in the state, flowed 183 barrels of 41-gravity oil, with gas-oil ratio of 4851/1, on 6-hour test through ½-inch choke after using 2000 gallons of acid through perforations at 6732-56 feet. The Viola was entered at 6718 feet, being flat with the highest. Flowing pressures in this area are the highest in the district.

Dave Bennett and J. W. Sorrels' Milon 1, Block 13, Titus County school lands and near the south line of Montague County, was drilling at 6820 feet. Nominal gas shows were passed up in the Bend, topped at 6066 feet. Continental Oil Company and Sinclair Prairie Oil Company's Garlington 1, Sect. 3422, TE&L Company Survey, and ½ mile north of Bowie, was drilling at 6985 feet in the Viola, topped at 6860 feet. Minor shows of gas were logged in the Bend and Marble Falls.

Cooke County: Sun Oil Company and Standard Oil Company of Texas' Midkiff-Davis 1, 1⅔ miles east by north of the Sivels Bend field's single Ellenburger discovery, was abandoned at 9550 feet in dolomite. No porosity or saturation was encountered in entering the Ellenburger at 8580 feet, or 6 feet low. However, this failure correlates 106 feet low on the Simpson detrital and 126 feet low on the Simpson lime.

Standard's Ward 2, southeast edge of the field, flowed 284 barrels of oil natural on 20-hour gauge through ¼-inch choke from the Mable Field (Strawn) sand perforations at 6610-35 feet, with the hole bottomed at 6891 feet, or 14 feet in the Morris sand. Test may also be made of the latter zone.

Redman Brothers et al's Wheeler 1, H. Ledbetter Survey A-601 and 2 miles southwest of the Bulcher field, tested salt water from open hole at 2843-60 feet, having plugged back from 3010 feet. Further tests will be made through casing perforations opposite numerous fair to good shows in the Strawn.

Young County: Henry Craig et al's Hennig 3, SE NW TE&L Company Block 65, and 1¼ miles southwest of production, opened a new pool near a cluster of failures in pumping 8 barrels initial from sand at 1066-69 feet.

Grayson County: Standard's Mitchell 1, northwest edge of Sherman and an Ellenburger prospect, resumed drilling after cementing protection string of 9⅝-inch pipe at 8177 feet. The company is starting a second test to explore numerous fair to good zones of porosity and saturation passed up by Mitchell 1 in drilling through the Strawn.

Blanchard Is Visitor

General Andre Blanchard, head of the French Petroleum Commission, which is negotiating for petroleum shipments to France, is visiting the Mid-Continent area, and has been in Houston, Austin, Dallas and Fort Worth. He recently flew to Tulsa for consultation with officers of The Carter Oil Company.

Dan Moran, president of the Continental Oil Company, Ponca City, Oklahoma, is scheduled to take the Frenchman to Ponca City, and then back to Houston following the general's work in the area.

☆ East Texas

Mount Sylvan Paluxy Failure Being Deepened to Glen Rose

Paluxy failure in Mount Sylvan field deepens to Glen Rose for geological information; official gauge given Bowie County's second Smackover lime discovery.

Anderson County: Humble Oil & Refining Company's Freeman 1, Brushy Creek prospect, was fishing for section of drill-pipe at 12,686 feet. It is credited with having reached the Travis Peak.

Bowie County: Barnsdall Oil Company et al's Pickering 1, R. E. Sevey Survey and 3 miles northeast of the Eylau 1-well pool, has been completed as the second Smackover lime producing area for the county and state in testing 59 barrels of distillate and 1.4 barrels of acid resdue, with gas-distillate ratio of 63,000/1, through 20/64-inch choke. This production is from open hole at 7030-7088 feet, having plugged back from 7501 feet. Sohio Petroleum Company and Phillips Petroleum Company have an interest in the discovery. An additional test is proposed to try for oil production.

Smith County: Ed. Pace and Gordon MacLean's Johnson 1, Andrew Kent Survey and 5900 feet southeast of the Mount Sylvan field's Paluxy discovery, was drilling at 7510 feet to establish the top of the Glen Rose for geological information. Nearby lease owners contributed towards the deepening after the outpost failed in the Paluxy, which was entered at 7369 feet, or 102 feet low, and no sand was encountered in the upper section.

This failure will cause independents that hold small leases within Humble Oil & Refining Company's discovery block to postpone operations until the trend of production is confirmed. The trend is generally considered to be northeast-southwest from the producer. Humble has not started operations on projected north and east offsets to its discovery.

Henderson County: Lone Star Producing Company and Magnolia Petroleum Company's Faulk-Wofford 1, 3900

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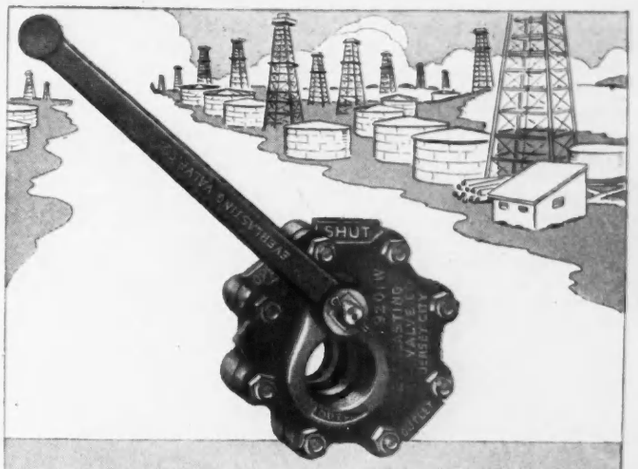

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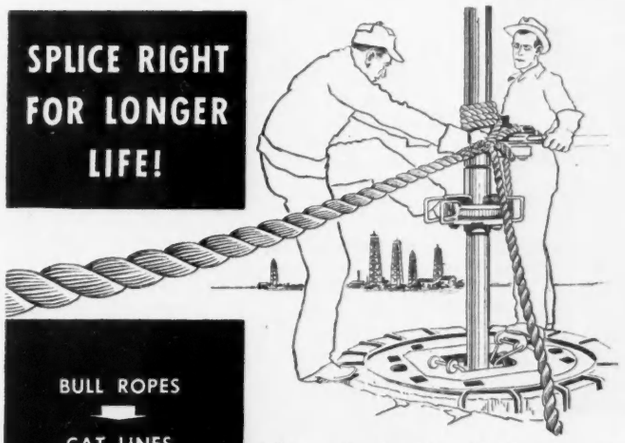

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feet southwest of the LaRue pool discovery in the 8200-foot Bacon lime (Rodessa), tested dry after using 6000 gallons of acid opposite formation perforations at 8872-86 feet in the Pettit, topped at 8858 feet with elevation of 473 feet. It correlates flat with the discovery, but showed water when drill-stem test was made in the Bacon at 8241-54 feet.

Cherokee County: Hunt Oil Company's Andrews-Pure 1, Travis Peak prospect and 2 miles west by north of Jacksonville, entered the Georgetown at 5560 feet, with elevation of 497 feet, and was drilling at 6880 feet.

Freestone County: The Texas Company's White 1, Wm. King Survey and 5500 feet west of its Travis Peak gas-distillate discovery in the Fairfield area, was drilling at 8060 feet in the Travis Peak, topped at 7905 feet.

Cass County: W. B. Hinton's J. O. Betts 1, wildcat, A. S. Beard Survey, 3 miles southeast of Marietta, was nearing 6770 feet with no shows reported. Operator cored the Paluxy sand around 5500 feet, and got white sand. The Woodbine also was cored at 3748-78 feet, with recovery showing some stains of dead oil. The test is scheduled to 7800 feet.

Marion County: Magnolia Petroleum Company et al's Orr 1, Fowler Survey, was preparing to start pumping operations for official completion from the Travis Peak as a discovery.

Harrison County: Rogers Lacy's Baker 1, Albright Survey, 2 miles northeast of production in the Whelan gas-distillate field, spudded and set surface casing.

Panola County: Delta Drilling Company's Guill 1, Carthage field, which will not go to 8500 feet as reported, but only test present production levels, drilled around 4873 feet.

Wiley Page et al staked James Briggs 1 as a semi-wildcat, E. Morris Survey, on the northwest flank of the Carthage field, 3 miles northeast of Beckville. It will seek oil production found in the Travis Peak.

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WEIGHT INDICATOR

☆ South Central Texas

Humble Reduces Gas-Oil Ratio At Jourdanton Field Producer

Humble cuts down gas-oil ratio at new producer in Jourdanton field; Bastrop County wildcat has small gas show; initial test given Carrizo park wildcat.

Atascosa County: Humble Oil & Refining Company has cut down the gas-oil ratio to 850/1 at Alamo Lumber Company 1, best well discovered in the Jourdanton field. The latest gauge on the well set the flow at 132 barrels of 38.2-gravity oil per day with no water after squeezing at 7390-97 feet with plastic and re-perforating at 7387-97 feet. The well had gas-oil ratio of 3091/1 before squeezing off and reshooting.

Bastrop County: C. W. Voyles' Moncure Est. 1, wildcat 4 miles southwest of Bastrop in the M. Rosseau Survey, still had a slight show of gas while drilling at 3165 feet. An Edwards lime test, the wildcat topped the Taylor at 1950 feet and the chalk at 2770 feet.

Dimitt County: Humble's Kate Bradshaw 1, wildcat that has opened production in the Carrizo Park area, gauged 27.75 barrels of oil per day on ¼-inch choke on initial test. Located in Lot 7, T & NO Survey 15, the well tested 16 percent basic sediment and had 55 pounds tubing pressure on the test. Perforations were from 2795-2807 feet and total depth is 2965 feet with 5½-inch casing set to 2875 feet.

Interstate Completes Projects In Louisiana and Mississippi

Two Southern Division construction projects initiated in March by Interstate Oil Pipe Line Company, Tulsa, have been completed, the company announced. They are the extension of more adequate service to the Bayou Perot field in the marshlands of La Fourche Parish, Louisiana, and construction of a line connecting the Eucutta field in Wayne County, Mississippi, with the Heidelberg terminal and loading rack.

The Bayou Perot extension project was started March 17, and the line filled the first time May 6. The 10⅓-mile, 8-inch connection for the Eucutta field was begun March 24 and completed April 23.

Gas Rate Hike Wanted

The State Corporation Commission will be asked to raise the market price of Oklahoma natural gas at the well, Ray O. Weems, vice chairman of the commission, predicted. He said the subject of gas rates in the Hugoton-Guymon field twice had been brought into testimony in cases before the Commission, but added that no actual application had been filed.

☆ Southwest Texas

Duval County Strake Field Well Has Water on Drill-Stem Test

Strake field well flows salt water on drill-stem test; fourth well in new field between Garcia and Boyle fields staked; Boyle-Rincon extension well completed.

Duval County: Santa Clara Oil Company et al's Yates 2-A, Strake field, flowed salt water on a drill-stem test from perforations at 2168-81 feet. Believing there was a bad cement job, operators squeezed the perforations off and will make further tests.

Starr County: W. L. Goldston has located Roos & Bennett 3 in the oil field recently opened halfway between the Garcia and Boyle fields. The Roos & Bennett 3 is 1940 feet northwest of Roos & Bennett 1, which showed for gas at 3252-75 feet, and 660 feet north of W. H. Holland's Roos-Bennett 1, which has shown for oil production at 2959-66 feet.

George H. Echols' M. M. Garcia 2, discovery well in the Boyle-Rincon extension area, has been completed for a potential of 20 barrels of 42-gravity oil per day through ¼-inch choke and tubing pressure 120 pounds. Drilled to total depth of 4106 feet, 5½-inch casing was set to 3474 feet and perforated from 3394-3402 feet in the Frio. The well is 14 miles northeast of Rio Grande City and northwest of the Boyle field and southwest of the Rincon field.

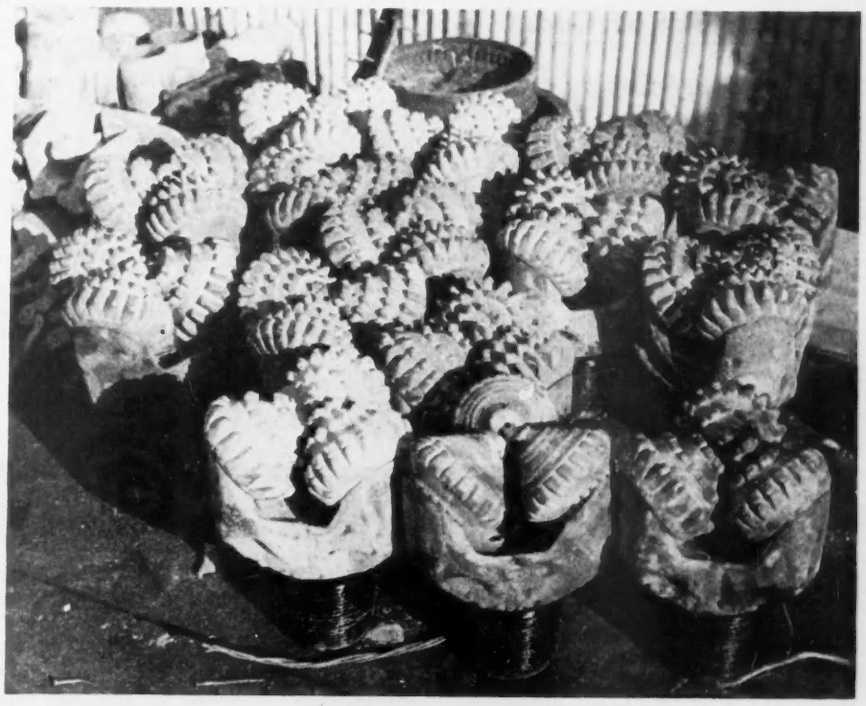
Chicago Corporation Secures Interest in Loffland Company

Chicago Coropration has acquired a substantial interest in Loffland Brothers Company of Tulsa, drilling contractors. No statement was made by H. L. Sullivan, president of Loffland, on the amount involved in the transaction, which outside interests estimated to be $11 million. Loffland is reported to own and operate 100 drilling rigs.

Tom S. Loffland, chairman of the board, and Sullivan indicated that policies and management would continue unchanged. Richard Wagner is president of Chicago Corporation, which dealt mainly in securities until five years ago. It now owns extensive natural gas interests and crude production in Texas, and two cycling plants at Corpus Christi.

Shell to Begin Construction On Building at Lake Charles

Shell Oil Company will begin construction soon on a two-story office building adjacent to that now occupied by the company at 1806 South Street, Lake Charles, La. The additional facilities will triple present floor space to 10,200 square feet. The staff will be expanded to 40 members, who will direct all exploration and production activities in South Louisiana. In addition to the present production department there will be an exploration department, including paleontological, subsurface and geophysical sections, and a land-survey section. E. N. Van Duzee, division manager, will continue as head of the production department; C. L. Herold, district geologist, will head the exploration department; and H. L. Ohlinger, party chief, will have charge of the land-survey section. J. C. Skains is being transferred from Baton Rouge as a land agent.



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☆ Lower Texas Coast

Sliva Field, Bee County, Has New Gas Pay in Frio Zone

Sliva field has new gas pay in Frio zone; Jackson County wildcat opens new gas field while another is abandoned as a dry hole; Jim Wells County wildcat blows out and bridges over; Albert West outpost test flows oil on drill-stem test.

Bee County: A new gas sand in the 3400-foot Frio zone in the Sliva field has been found productive by Birdwell Oil Company at Jake Huble Estate 1. Located 3850 feet west-southwest of the Sliva 1 oil discovery, Huble 1 was drilled to 4500 feet and when electrical log failed to indicate showings of value in the 4400-foot Stillwell discovery pay sand, operators plugged back for completion in the Frio. A drill-stem test in this zone developed 300 pounds working pressure in 5 minutes with bottom-hole pressure of 1180 pounds flowing and 1540 pounds shut in.

Jackson County: Hewit & Dougherty's Johnson 1, 3½ miles northwest of the Cordele field, has opened a new gas field. From perforations at 4156-60 feet the well flowed gas and was shut in with no gauge made, but had tubing pressure of 1680 pounds and casing pressure of 1725 pounds. The well is 660 feet from the NE and SE lines of Lot 3, Hollingsworth Ranch subdivision, William Whitaker Survey A-79, and 10 miles north of Edna.

Barnsdall Oil Company has abandoned Union-Keeran 10, wildcat 2⅔ miles southeast of the Keeran field and 5 miles southwest of the West Ranch field, after it made salt water on production tests at the 3900-foot level. The well was drilled to 8150 feet and after running electrical log, 5½-inch casing was set to 3940 feet for the test that failed to show oil or gas.

Jim Wells County: Haynes B. Ownby Drilling Company's V. Gonzales 1, wildcat 10 miles north-northwest of Alice and 1½ miles southeast of the shallow Armagosa gas field, blew out from total depth of 6800 feet and then bridged over to choke the blow. Operators have started a fishing job for the drill pipe which stuck when the hole bridged over. Drill stem tests were made at 6295-6390 feet and 6420-60 feet for a light gas show, and tests from 6545-61 and 6659-65 feet recovered salt water.

Live Oak County: Continental Oil Company's Albert West 1-B, outpost 5615 feet southeast of the discovery well in the Albert West field, flowed oil on drill-stem test from perforations at 6787-90 feet in the Slick sand. With 6-inch casing set to total depth of 7750 feet, the well flowed 5½ barrels of 31-gravity oil in 18 hours through ⅛-inch choke. Electrical log run to total depth showed the Slick sand from 6747-85 feet with the oil-gas contact at 6785 feet.

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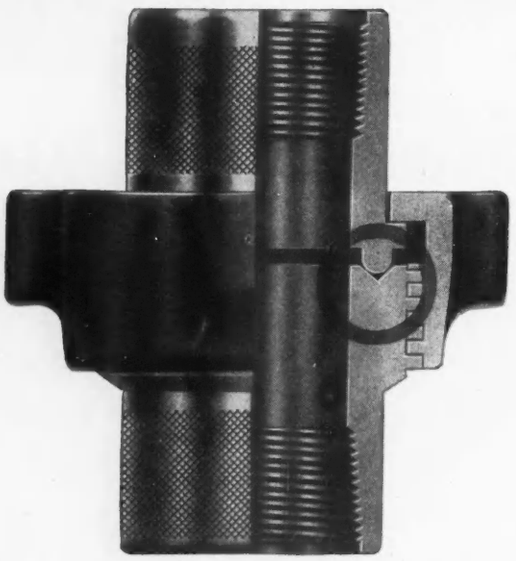

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HOUSTON, TEXAS

Fuel Used in Federal Projects Ruled Subject to State Tax

Though gasoline and motor fuels used in construction work are for federal projects, the products are subject to the state gasoline tax, the Oklahoma Supreme Court ruled recently.

Leo Sanders, owner of the Sanders Fuel Company, appealed from the Oklahoma Tax Commission's ruling covering gasoline used at the Wolf Creek flood dam in Woodward County, Oklahoma, and the Oklahoma aircraft assembly plant in Oklahoma City. Sanders had obtained a motor fuel dealers' license and between January, 1941, and August, 1943, as a dealer, purchased gasoline from a Cushing, Oklahoma, refinery.

The fuel was stored in the so-called "federal areas" and there used in tractors and other power equipment on the projects. Since none of the gasoline was used in vehicles on the highways, Sanders held that under such conditions the gasoline was not subject to the levies.

Federal Pipe Line Tax Exceeds April 1945 Mark

Federal gasoline-tax collections in April were at the highest level touched since last November, and the revenue of $32,907,105 was $3,430,000 above the $29,474,532 recorded in April, 1945, it was reported by the Internal Revenue Bureau May 28.

The pipe line tax also topped last year, $1,287,899 against $1,036,285, but lubricating oils returned only $5,584,895 compared with $7,468,777, the bureau announced.

So far this year, revenue from the three taxes is some $18 million under a year ago. The four-month revenue from transportation was $4,813,124 against $5,088,540; lubricating oil, $20,203,204 against $30,036,756, and gasoline, $115,569,594 against $124,900,303, bureau records showed.

☆ Upper Texas Coast

Phillips Finds New Producing Sand in Chocolate Bayou Field

Phillips has new producing sand in Chocolate Bayou field; new shallow pay noted for Cedar Point field in Galveston Bay; Fairbanks area of Harris County gets new gas pool; Conroe wildcat has show of oil; Waller County wildcat to drill to 10,000 feet.

Brazoria County: A new producing sand for the Chocolate Bayou field has been discovered in Phillips Petroleum Company's M. V. Armstrong 1, north outpost test. Pipe was perforated with 44 shots from 10,644-659 feet and on initial gauge the well flowed 72 barrels of oil with an unestimated amount of gas. Located in the Hooper & Wade Survey Abstract 424, sect. 15, the Armstrong 1 was drilled to 11,653 feet and plugged back to 10,796 feet for completion.

Galveston County: Standard Oil Company of Texas has completed Galveston Bay State 3-M-118 in the Cedar Point field in a new shallow pay sand. Perforated from 3660-65 feet, the well flowed 116.11 barrels of 26.7-gravity oil in 24 hours through 5/32-inch choke with 290 pounds flowing pressure on tubing. This well was initially completed in January from open hole at 3870-3900 feet and has now been reworked for a new completion.

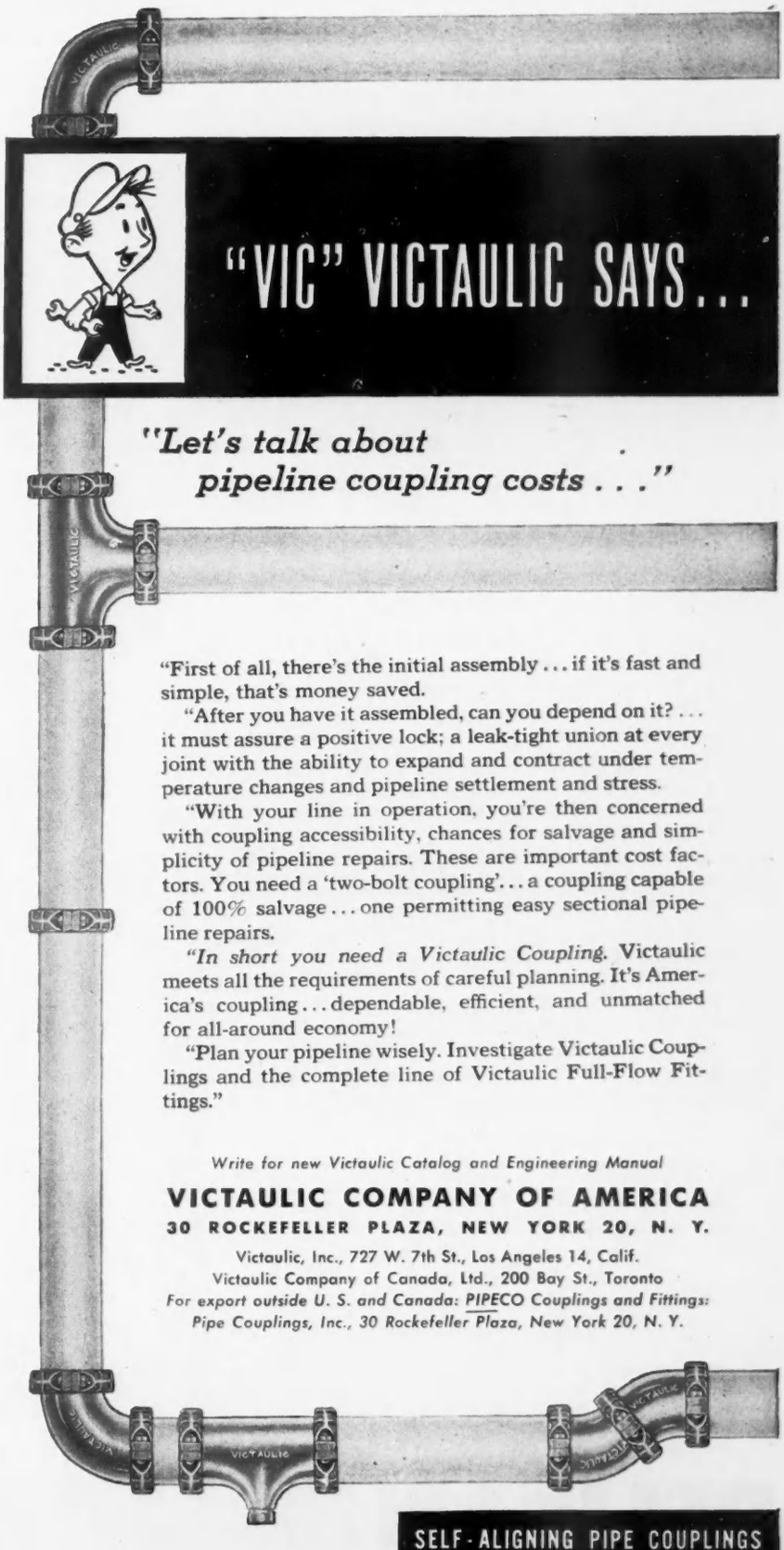
Harris County: A new gas pool for the Fairbanks area has been opened by Dick Schwab and Jack Frazier's Caldwell 1, A. G. Holland Survey, 3 miles south of Fairbanks townsite and 2 miles from production in the Fairbanks pool. With total depth of 8475 feet and 5½-inch pipe set to 8343 feet, operators perforated from 8302-20 feet for a flow of dry gas with 1100 pounds pressure on tubing through ¼-inch choke.

Montgomery County: McKay Donkin & Lloyd Smith's C. L. Rawson 1, wildcat in the William Starrock Survey Abstract 486, 4 miles northeast of Conroe, made a drill-stem test of 10 feet of saturation at 4646-56 feet and in 5 minutes developed 300 pounds gas pressure and recovered 1 stand of oil-cut mud and 1 stand of mud and salt water.

Waller County: Floyd L. Karsten will take J. J. Menke 1, wildcat 2 miles southwest of Hempstead and 5 miles north of the Raccoon Bend field, to 10,000 feet. The well is drilling below 9000 feet after an electrical log was run to 9008 feet. A core from 7510-20 feet recovered sand with gas odor and slight condensate show; another core from 7530-40 feet had sand showing gas and condensate, and sands cored from 7670-90 feet had oil odor and salty taste. None of the sands showed up favorably on the log.

Suit Authorized

A suit seeking recovery of more than $68,000 from two oil companies allegedly due the state for gas production in the Oklahoma City field has been authorized by the School Land Commission, acting upon recommendation of State Examiner and Inspector John Rogers. A formal demand first will be made upon the Indian Territory Illuminating Oil Company, and the Cities Service Oil Company for a cash settlement of $68,800.40, Walter Marlin Commission secretary, said. If no settlement is reached, a recovery suit then will be filed.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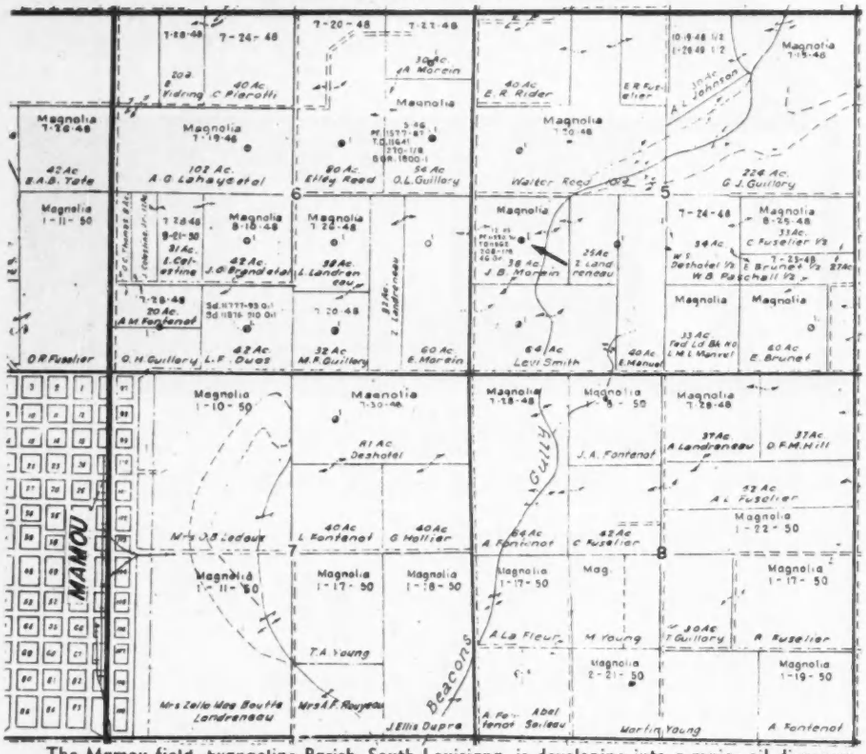
Mamou Field, South Louisiana



The Mamou field, Evangeline Parish, South Louisiana, is developing into a major oil discovery. The field, producing from the Wilcox sand, was opened late in December, 1945, with completion of Magnolia Petroleum Company's J. B. Morein 1 at 11,520-530 feet. The field at present has two producers with 8 rigs active as indicated on map above. Magnolia holds a solid lease block in the area. Reports indicate that several sands have been found below the discovery pay. The arrow points to the discovery well. Map by Zingery Map Company, Houston.

☆ South Louisiana

Good Well Is Completed in Egan Field 9800-Foot Zone

Good well completed in 9800-foot pay zone of Egan field; another "A" sand completion noted in Vinton pool; Lake Pontchartrain test hits salt water flow; Sun completes good well in Chacahoula field.

Acadia Parish: Passing up a gas and condensate show in the 10,100-foot pay zone, Sun Oil Company & Sohio Petroleum Company's J. R. Dailey 2-A, Egan field, has been completed in the field's 9800-foot pay horizon. With an initial production gauge of 272 barrels of 46-gravity oil daily through ¼-inch choke and 2825 pounds flowing pressure on tubing, pipe was perforated from 9910-14 feet and the gas-oil ratio was 12,580/1.

Calcasieu Parish: Another well has been completed in the Vinton pool "A" sand by Union Oil Company of California. Matilda Gray 43-G, 33-10s-12w, had a potential flow of 107 barrels of oil daily through ⅛-inch choke with 425 pounds flowing pressure on tubing. Gravity of the oil is 26.8 corrected and the well was drilled to a total depth of 5086 feet with 5½-inch casing set to 5073 feet and perforated for completion at 4996-5017 feet.

Jefferson Parish: Scheduled to drill to a total depth of 12,000 feet, The Atlantic Refining Company's State-Lake Pontchartrain 1-C, hit a salt water flow while drilling at 10,927 feet. Located in Lake Pontchartrain on state lease 318, Unit 3, Block 8, the wildcat has protection string of 9⅝-inch pipe set to 7829 feet.

Lafourche Parish: Sun's Dibert-Stark-Brown 30, Chacahoula field, was completed for a good well in the 7600-foot pay horizon. The well flowed on potential 178 barrels of 33.2-gravity oil daily through ⅛-inch choke with tubing pressure 1150 pounds. Drilled to total depth of 7828 feet, the well had 7-inch pipe set to 7800 feet and perforations for completion at 7658-84 feet.

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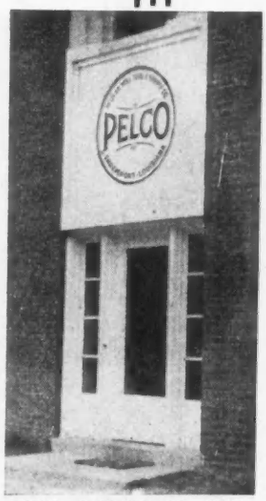

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THE OIL MAN'S CALENDAR

JUNE	
6– 7	**Mid-Continent District, Production Division, API, Spring Meeting, Oklahoma City, Skirvin Hotel.**
7– 8	**Kentucky Oil and Gas Association, Lexington, Ky., Hotel Lafayette.**
13–14	**Eastern District, Production Division API, Spring Meeting, Pittsburgh, Pa., William Penn Hotel.**
17	**FPC Gas Hearing, Washington, D.C. Court of Appeals, 5th and E.**
27–28	**Pennsylvania Grade Crude Oil Association, Annual Meeting, Pittsburgh, William Penn Hotel.**
AUG.	
8–9–10	**Interstate Oil Compact Commission, Quarterly Meeting, Grand Rapids, Michigan, Pantlind Hotel.**
OCT.	
1–2	**American Association of Oilwell Drilling Contractors, Annual Meeting, San Antonio, Plaza Hotel.**
7–12	**American Gas Association, Annual Convention, Atlantic City, N.J.**
16–18	**Texas Mid-Continent Oil and Gas Association, Houston, Rice Hotel.**
28–30	**Independent Petroleum Association of America, Annual Meeting, Fort Worth.**
NOV.	
11–14	**American Petroleum Institute, Annual Meeting, Chicago, Stevens Hotel.**

☆ North Louisiana

Benton Field Has Pumping Well; Northwest Offset Try Fails

Benton field gets first pumping well; dry hole on northwest flank of field diminishes chances for extension in that direction; Richland Parish wildcatting undeterred by recent failures; Zwolle area, Sabine Parish, active; new Smackover tests to get under way in Claiborne Parish.

Bossier Parish: Barnsdall Oil Company's Unit 11 (George Nelson well), 35-21-13, Benton field, was reported a dry hole, diminishing hope for a northwest extension of the Benton field. The 11th well in a series of 14 to be drilled in the Benton field to test the extent of the unit, it is on northwest boundary of the 9000-acre tract which the State Conservation Department recently unitized. Coring began at 8030 feet, and no showing was indicated in the "D" sand level.

Same operator's Carter-Burton 1, 26-23-13w, a test outside the present known limits of the Benton unit, was running electric log at 10,700 feet.

Caddo Parish: W. C. Feazel et al have filed application for drilling permit for a wildcat test 4 miles southeast of Bethany gas production, to be known as S. L. Herold 1, C NW SW 21-15-16w. It is scheduled to 7000 feet, or 500 feet into the Travis Peak zone.

Sabine Parish: Union Producing Company's Louisiana Long Leaf Lumber Company 1, wildcat in 29-8-11w, Zwolle area, was drilling at 10,162 feet.

The Carter Oil Company's Louisiana Long Leaf Lumber Company 1, 27-7-10w, is drilling below 9155 feet. The test is southeast of Zwolle production.

The Zwolle area will have a third wildcat test when H. J. Kirk gets operations under way at Long Bell Petroleum Company 1, NE 4-6n-13w. It will be a 2500-foot chalk test, 7 miles southeast of Zwolle.

Richland Parish: R. T. Sellars Company's Burke 1, Paluxy wildcat test, was located 330 feet east, and 660 feet north of the SWc SE SW 4-16-7e, 2½ miles west of operator's Ford 1. Same operator's Clark 1, wildcat, was located 330 feet north and west of SEc NE SW 2-16-7e.

F. B. King and C. W. Sharp have applied for permit for Arthur Thompson 1, SW NW 16-17n-9e, to test the Glen Rose. It is north of the Delhi field.

Claiborne Parish: Blackwell Oil & Gas Company has issued contract to Grady Vaughn to deepen the Waller-Sherman 2, SE NW 23-23n-8w, to the Smackover lime. The test was carried to 9065 feet and abandoned early in the year after failing to log sufficient saturation in the Cotton Valley for commercial production. A report also stated that Blackwell would drill another Smackover lime test on W½ SE 22-23n-8w.

☆ Arkansas

Wichita County Test Becomes First Pumper for Wesson Field

Wesson field in Ouachita County has first pumper; 2 wildcats fail in Ouachita and Dallas counties.

Ouachita County: Lechner and Hill's R. W. Wesson 1, 25-15-19, went on the pump at 2911 feet, with gauge not yet made. It is the Wesson field's first pumper.

C. A. Lee's J. E. Morgan 1, CNE NE SW 2-15-19, was drilling below 1500 feet. This well is 3 miles north of the Wesson field on the Ogemaw structure.

S. J. Felsenthal et al's Medlock 1, C SE NE SW 29-15s-18w, midway between Wesson and Gum Creek fields, was abandoned at 3504 feet. It topped James lime at 2900 feet and entered the Travis Peak at 3253 feet. Log indicated the test to be lower on structure than a dry hole ½ mile northeast, which went to the Smackover at 6093 feet without showings.

Union County: Guy Mabee et al moved in to drill Union Saw Mill 1, NE SE NW 31-18-11w, about 3 miles southeast of the shallow New London field. The test will go to 6300 feet or Smackover.

Spacing Hearing Opened

The Kansas State Corporation Commission has opened a rehearing on its 40-acre space ruling order handed down April 26, on request of a petition submitted by about 500 independent operators and land royalty owners. The 40-acre spacing rule went into effect during the war under federal regulations as a material-saving program. The Commission ruled in favor of 40-acre allocation for proration purposes to wells 4000 feet and deeper, and to wells in specified pools developed under the wartime 40-acre spacing program.

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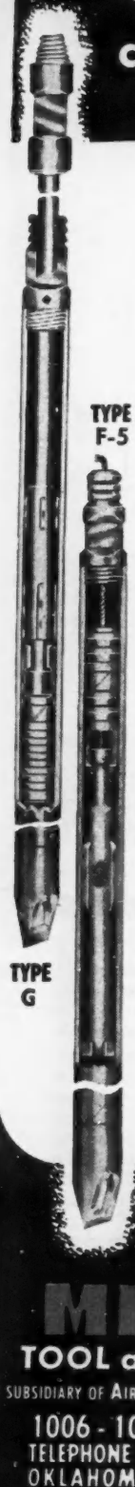

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☆ Mississippi

Slight Shows Registered in Wilkinson, Yazoo Wildcats

Slight shows recorded in Yazoo County wildcat; Wilkinson County deep test recovers shows in cores from lower levels.

Yazoo County: Southern Natural Gas Company's Gammill Investment Company 2, SE SW NE 6-9n-4w, wildcat which reported slight shows of heavy oil last week, had a show of gas in a drill-stem test at 6750-77 feet. On a 15-minute test with ¼-inch tubing choke, 210 feet of mud slightly cut with gas were recovered together with a heavy input of salt water. There is no indication of commercial production so far, however. The well is running core tests in the 6800-foot zone.

Wilkinson County: Danciger Oil & Refining Company's George W. Armstrong 1, 5-4n-2w deep test, had slight shows of oil in sand with good porosity from cores at 11,079-081 feet. There is no evidence that shows indicate commercial potentialities and cores taken immediately above and below that point drew a blank. Driller continues to core below 11,203 feet.

Madison County: Vaughey & Vaughey's Garrett Unit 1, SW SW NE 11-11n-3e, Picken field, has been completed for the first new producer in the field in some time. Production is from the Eutaw horizon at 4860 feet and initial test pumped 167 barrels of 41.6-gravity oil. Union Producing Company's Cameron A-1, NE NW 2-9n-1e, wildcat, is readying for test of 4800-foot zone. No shows have been reported.

Jeff Davis County: Gulf Refining Company's Mullins-Griffith Unit 1, NEc 34-9n-19w, Gwinville field which has had considerable trouble with salt water, is preparing to squeeze and reperforate after drill-stem test at 9260-65 feet recovered only 5 percent oil.

Copiah County: Sun Oil Company's Mrs. Lee Little 1, NWc 8-2n-6w, wildcat in the western section of the state, is drilling at 2850 feet after topping cap rock at 2630 feet. Cores taken at 2636 and 2785-2815 feet recovered nothing encouraging.

Greene County: Humble Oil & Refining Company's Greene County Board of Supervisors 2, 16-3n-7w, flank test of the Byrd dome, is drilling below 6823 feet with no shows indicated. Well has been cored continuously and in section below 6400 feet, tests are recovering sand and shale with salt water.

Yalobusha County: J. S. Henderson's Stone 1, NE SW 21-24n-6e, rank wildcat in the northern section of the state is drilling at 2600 feet in a shallow test. No shows have been reported. The area is comparatively new as far as tests are concerned but has shown up well geophysically on structure.

Jasper County: Rogers Lacy's Paul Morrison 1, SWc NW NW 33-1n-13e, East Heidelberg field, has been completed for a good oiler with an initial production of 88 barrels per day with production from the Eutaw zone at 4907-22 feet. W. R. Landrum's J. F. Bethea 1, SE NE NE 13-1n-12e, East Heidelberg, is running core tests after topping Eutaw at 4774 feet. Cores taken at 4777-91 feet indicated 7 feet of saturated sand with fair porosity.

Alabama

Glen D. Rose Oil & Gas Company's First National Bank of Birmingham 2, NW SE 30-12s-7w, Walker County, logged showings of gas at 1240 feet in the upper Bangor lime and a show of gas at 1788 in the Tuscumbia. Showings of oil were reported at 1445-50 and 1455-65 near the base of the Hartselle. It was drilling at 2009 feet.

Winston County: Rose's First National Bank of Birmingham 3, SE 7-12s-8w, had gas shows at 1384-94 and 1440-45 feet in the lower Bangor. Log indicated asphaltic oil at 1475 and live oil at 1485-90 feet in the Hartselle. The test is drilling at 1537 feet. Other tests drilled in the area have had shows but none in commercial quantity.

Florida

O. D. Robinson's State 1, NEc NW 29-59s-40e, Monroe County, most important Florida test in months, is continuing efforts to develop commercial production from shows in the 10,000-foot zone. Casing was set to 10,395 feet and perforated at 10,337-363 feet with 130 shots. Section was shot with 2000 gallons of acid and in 6-hour test water and some shows of heavy black oil were recovered by swabbing. Well was re-acidized with 10,000 gallons and swabbed again to produce acid, wash water and small amounts of heavy black oil. Swabbing operations continue.

Levy County: Sun Oil Company's J. P. Goethe 1, SWc 31-14s-17e, wildcat, is running core tests below 3612 feet with no shows.

Osceola County: Humble Oil & Refining Company's N. Ray Carroll 1, SE SE 10-27s-34e, wildcat, is preparing to check the 2000-foot zone after plugging back from 3047 feet. No shows have been reported.

Hernando County: The Ohio Oil Company's Hernasco Corporation 1, NWc 19-23s-18e, wildcat, is drilling below 7853 feet with no shows reported at lower depths.

Dixie County: Stanolind Oil & Gas Company and Sun Oil Company's Perpetual Forest 1, NW NW 5-11s-11e, wildcat, is running core tests below 3700 feet. No shows have been reported.

Hillsborough County: Humble's T. S. Jameson 1, NE NE 7-31s-22e, wildcat, is working below 9342 feet after running electric log. No shows have been reported.

☆ Rocky Mountain Area

Continental Has Good Gasser In South Elk Basin, Wyoming

Continental gets important gasser at South Elk Basin, and interesting producer at Rangely field.

Wyoming

Bringing in a gasser tested for 13,813,000 cubic feet per day at South Elk Basin, Continental Oil Company has shown that the new field it brought in last year is important as a source of gas. The well was the Northern Pacific 5, total depth 7311 feet, with production from the Morrison.

Montana

Continental abandoned H. A. Brown 16, Cat Creek field, after bringing in 7

producers on the same structure recently.

Colorado

In the Rangely field Continental encountered a stray producing sand a little above the Weber while drilling Rooth 2, and at the end of the week was cleaning the hole while awaiting a decision as to whether to complete there or go on to the Weber. This well, perched on a hillside, has surface elevation of 5753 feet, considerably higher than the Rooth 1, which has proved to be one of the field's best producers after encountering water in the Weber. The uncharted loose coarse sand lying slightly above the hard Weber sandstone was encountered at 6121 feet.

☆ California

Kern County South Belridge Test Is Coring Below 10,700

Attention focused on South Belridge deep test now coring below 10,700 feet; Mountain View outpost completed flowing 325 barrels; test of Cymric well produces gas flow of 20 million cubic feet; Gardena wildcat undergoing tests; Paloma completion extends production ½ mile; 2 companies to drill on 25,000-acre lease in Santa Barbara County.

Kern County: In the Devils Den area where Barnsdall Oil Company last week abandoned Bates 1, wildcat in 20-25s-19e, at 1276 feet, this company will drill a second test, Bates 2, about 500 feet northeast of the first well, in which some sand was logged but not sufficient to justify setting casing and making a test.

Continental Oil Company has located BVA 1, wildcat in the southwest corner of 8-32s-25e, and west of the deep test being drilled by Seaboard Oil Company and 3 associated companies in Sect. 14. The latter well had been drilled to 11,495 feet when part of the hole was lost and it is now being redrilled below 8150 feet.

Lloyd S. Gilmour is rigging up to drill Tejon 1, wildcat near Comanche Creek in 25-32s-29e. In the Dominion area, Gene Reid Drilling Company is preparing to spud Jean 1, a wildcat in 15-26s-28e.

Belridge Oil Company's deep test of the South Belridge oil field, 62-W-33 in 33-28s-21e, is coring below 10,710 feet. General interest in this test is largely due to the fact that General Petroleum Corporation 12 years ago drilled its famous Berry 1 wildcat in Sect. 30 to what was then the world's record depth of 11,377 feet. Mechanical difficulties prevented a test of showings obtained in this well and finally compelled the operator to abandon it.

The Texas Company's outpost well at the south end of the Mountain View field, Richfield-Mott 1 in 9-31s-29e, has been completed flowing 325 barrels of 32.8-gravity clean oil through ¼-inch choke with 1100 pounds pressure on the tubing and 1900 pounds on casing. Total depth is 6650 feet with shut-off at 5930 feet.

In the small producing area at Blackwell's Corner, Amerada Petroleum Corporation will drill 5 more wells on the Ellis Fee property in 19-26s-19e, according to field reports.

Near the Cymric field, Universal Consolidated Oil Company's outpost test, Sauerdough 7 in 23-29s-21e, is reported flowing 20 million cubic feet of gas but no oil and no water on a formation test of the interval 5163-5307 feet. Crew is reaming to deepen.

In the paloma field, Western Gulf Oil Company's L.A.A.C. 76-1 in 1-32s-26e, flowed 2000 barrels of 31.7-gravity oil through 26/64-inch choke on a formation test with packer set at 11,319 feet.

Los Angeles County: In the East Los Angeles field, Richfield Oil Corporation's Keller 1 in 9-2s-12w tested wet on a 2-hour trial and is coring. Total depth is 7690 feet with 8⅝-inch casing cemented at 7576 feet. The company's Vail 2 in Sect. 16 is coring at 7880 feet and Edison 1 is drilling at 7510 feet. Chanslor-Canfield Midway Oil Company has decided to deepen Bandini 1 in Sect. 21 and spot coring is proceeding below 10,265 feet.

The Ohio Oil Company is testing its Gardena wildcat, Gardena Community Four 1 in 23-3s-14w. With bottom at 10,288 feet in Schist, operator set a cement plug above the showings logged and then drilled through the plug for a shoulder for the formation tester packer. The resultant test failed and at last report the operator was retesting.

Drilling has started on the joint test of 6 major companies near the Los Angeles Municipal Airport. Six Companies' Fee 1 in 2-3s-15w is drilling ahead after cementing casing at 1085 feet.

Santa Barbara County: On a 25,000-acre lease on the Petan property north of Gaviota in 6-5n-32w, Honolulu Oil Corporation and Barnsdall will drill a joint wildcat, exact location for which has not been surveyed.

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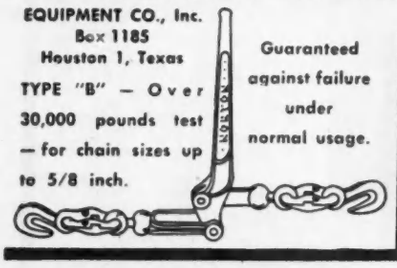

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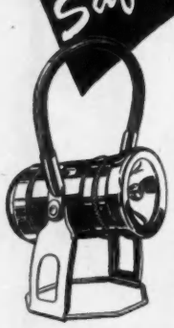

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☆ Michigan

State's Best Commercial Deep Gas Prospect Gauged by Pure

Pure has state's best commercial deep prospect in Clare County; Isabella County test may be important extension of Six Lakes gas field; state's deepest test plugged.

Clare County: The Pure Oil Company's Freer 1, N½ NW SW 18-17n-6w, Garfield Township, gauged 26½ million cubic feet of gas and 300 barrels of distillate from a 26-foot sand section in the Monroe to establish it as the best commercial deep gas prospect in the state's history. The wildcat is 6 miles northeast of the Fork oil field.

Tuscola County: Gordon and Palmer's Palm Book 1, SE SE SW 31-14n-11e, Elkland Township, wildcat, swabbed 48 barrels of oil after standing 40 hours from a Dundee lime pay between 2685 and 2690 feet. Test is on a Shell Oil Company farm-out lease and 5 miles southeast of Shell's abandoned Hutchinson 1, completed as a Dundee discovery last year.

Isabella County: West Michigan Consumers Company's Lake 1, SE NW NE 30-13n-6w, Rolland Township, 3 miles east of the old Six Lakes gas field, gauged 2½ million cubic feet of gas in Michigan Stray sand at 1335-36 feet. It may be an important extension or a new gas pool opener.

Bay County: Gulf Refining Company has plugged Bateson 1, S½ SE SE 2-14n-4e, state's deepest test, which was drilled to 10,447 feet in 1941 and then plugged back to 7810 feet and completed for gas in the Salina. It was never produced commercially due largely to salting trouble, although gauged for 7 million cubic feet. A later test drilled a mile north was dry in the same horizon.

The deep test, estimated to have cost upwards of $1 million, held both the Michigan depth and gas producing depth record. A blowout at 7775 feet destroyed rotary rig and derrick which was replaced, with the old hole eventually sidetracked at 6265 feet and completed to the St. Peter sand at 10,447 feet.

Pressures recorded on the well were described as highly abnormal with shut-in casing pressures logged up to 3980 pounds and after final plugback and completion, casing pressures reached 3500 pounds and tubing pressure 3400 pounds, shut in.

Papers Listed for API Eastern District Meeting

Papers scheduled at the spring meeting, Eastern District, API Division of Production, William Penn Hotel, Pittsburgh, Pa., June 13-14, include the following:

Thursday morning, Virgil F. Bowyer, The Peoples Natural Gas Co., presiding: "Federal Power Hearings in the Natural Gas Industry," E. Holley Poe, New York; "Problems We Face Today," Walter S. Hallanan, Plymouth Oil Company, Pittsburgh. Afternoon: Kurt H. Andresen, South Penn Oil Company, Bradford, Pa., presiding: "Design and Construction of Water Pumping Plants," George W. Holbrook, Empire Gas and Fuel Company, Wellsville, N. Y.; "Source and Purification of Water Supply," A. R. Ellenberger, Smith-Newton Oil Company, Bradford, and George W. Holbrook; "Gas Requirements in Gas Drive Oil Recovery," R. J. Day and Dr. S. T. Yuster, The Pennsylvania State College, State College, Pa.; "Gas Recovery Systems," Douglas Rogers, Jr., South Penn Natural Gas Company, Parkersburg, West Va.

Friday morning, R. B. Anderson, Columbia Carbon Company, Charleston, West Va., presiding: "Oil and Gas Possibilities in the Appalachian Region with Emphasis on the State of New York," Dr. E. T. Heck, New York State Geological Survey, Albany; "Safety in the Oil and Gas Fields," Paul Walton, Industrial Gas Corporation, Newark, Ohio; "Oil Economics," H. M. McClure, independent producer, Alma, Michigan. Afternoon: M. Gordon Gulley, Gulf Oil Corporation, Pittsburgh, presiding: "Marble Shooting," J. Gordon Buch, Buch Agate Torpedo, Borger, Texas; "Reconditioning of Drowned Gas Wells," Dr. Yuster; "Deep Rotary Drilling in the Appalachian Region," Bruce Miller, The Ohio Oil Company, Findlay, Ohio; "Deep Cable Tool Drilling in the Appalachian Region," Harold W. Haupt, Acme Drilling Company, Greenburg, Pa.

The banquet is scheduled for Thursday evening and the business session, Friday afternoon. Committee meetings will be held Wednesday. Several special group luncheons are scheduled Friday noon.

V. F. Bowyer is chairman of the Eastern District API and J. F. Swain served as chairman of the program committee.

☆ Canada

New Canadian Company Spuds South Alberta Foothills Test

Quaich Oil Corporation, Ltd., a new Canadian independent, has commenced its initial wildcat on the Quaich structure, South Alberta Foothills. The well, Quaich-Globe 1, is in the SW 10 acres of Lsd 12 35-9-3w5. The well has spudded with cable tools, expects the Madison limestone objective around 4550 feet. Cable tools are being used to obtain all possible data on oil and gas prospects of sands above the lime, regarded as good prospects in this area. Calgary geologist Joseph S. Irwin, who staked the site, describes the structure as similar in type to Turner Valley—an anticline underlain by one or more faults of the overthrust type. Surface study indicates presence of limestone above the observed major thrust fault at comparatively shallow depth. The initial well is ½ mile west and about 600 feet below the indicated Madison lime crest.

Bata Petroleums, Ltd., has started its second 1946 wildcat in the Vera-Unity area of West Central Saskatchewan. The well, Bata 14, is in lsd 14 28-38-22w3, 6 miles southeast of the current southeast limits of the Unity gas field, and 2 miles south of Bata 13, initial 1946 venture abandoned recently as a dry hole.

McColl-Frontenac Oil Company, Canadian unit of The Texas Company, has taken out 2 oil and gas reservations covering 318,013 acres of crown rights in the Wetaskawin area, Central Alberta Plains. In hitherto virgin territory, the block extends from Twps. 42 to 49, in Ranges 23w4 to 1w5. North end of the block is 15 miles southwest of Edmonton.

EXPLORATORY COMPLETIONS

ARKANSAS WILDCAT

Ouachita County—Failure: S. J. Felsenthal's H. H. Medlock 1, se ne sw 29-15s-18w, between Wesson and Gum Crk flds, James 2900, Travis Peak 3253, abnd 3504.

CALIFORNIA WILDCATS

Kern County—Failures: Barnsdall's Bates 1, 20-25s-19e, Devils Den area, abnd 1276.

Beverly Trading and Exploration Co.'s W. P. 1, 30-29s 21e, Temblor area, abnd 2040.

Standard's K.C.L. 24-32, 30-11n-24w, San Emidio area, abnd 1850.

Fresno County—Failure: Seaboard Oil Co.'s Corehole 5, 16-17s-14e, Cantua Creek area, abnd 3118.

Los Angeles County—Failure: Claude Kavanaugh Leroy R. Wilhite's Ramona Hills 1, 8-4n-17w, Del Valle area, abnd 2026.

ILLINOIS WILDCAT

Clinton County—Oil Discovery: Paul Doran's Thomas 1, nw ne ne 13-2n-1w, pump 22 bbls, fr Cypress sd at 1417-23½, td 1423½.

Edwards County—Failure: Burr Lambert's Soucy 1, ne ne se 21-1n-10e, abnd 3393.

Franklin County — Failure: Robinson & Puckett's Robinson 1-A, nw se nw 13-7s-3e, abnd 3050.

Gallatin County—Failures: Herndon Drlg. et al's Downen 1, n½ nw se 1-8s-9e, abnd 2963.

Dirickson & Libernecht's Minor 1-A, se ne ne 28-8s-9e, abnd 2191.

Hamilton County—Failures: E. S. Adkins' Rubenacker 1, sw se ne 31-3s-6e, abnd 3444.

C. H. Nickerson's Flannigan 1, sw ne se 28-6s-5e, abnd 3430.

J. J. Lynn's Allen 1, se se sw 12-7s-6e, abnd 3400.

Jasper County—Failure: R. B. Martin et al Delta Drlg.'s Raef 1, nw nw se 35-6n-9e, abnd 3202.

Washington County—Failure: Collins Bros.' Sachtleben 1, nw nw se 33-1n-2w, abnd 1524.

Wayne County—Discovery: M. J. Mitchell's Cornstubble 2, nw se se 28-1s-5e, flow 750 bbls from McCl. 3097-3110, td 3110.

KANSAS WILDCATS

Butler County — Failure: Beech Aircraft's Kirkpatrick F, se sw ne 14-28s-3e, abnd 2555.

Rush County—Oil Discovery: Darby & Bothwell's Wagner 1, ne ne nw 28-18s-16w, pump 20-21 bbls, 10% wtr fr LaMotte sd at 3638-43, td 3644.

Stafford County—Oil Discovery: Cities Service's Kipp 1, ne ne ne 23-25s-14w, flow 100 bbls in 4 hours fr Lansing 3844-61, td 4303.

WESTERN KENTUCKY WILDCATS

Henderson County — Failures: Fisher Oil's Baker et al 1, 8-0-22, abnd 2652.

Herndon Drlg.'s Barret 1, 23-P-23, abnd 2662.

NORTH LOUISIANA WILDCATS

Red River Parish—Oil Discovery: M. T. Halbouty's Willie Savill 1, 301 fr el 180 fr nl 36-11n-10w, Nacatoch pay 1207-28, fl 35 bbls 45-gr, ¼-in, cp 475 lbs, tp 50 lbs, td 1277.

Richland Parish—Failure: E. G. Hooper-Geo. B. Franklin's Cochran & Franklin 1, (OWWD) c nw se 14-17n-8e, otd 3450, sw in Glenrose, abnd 4469.

Tensas Parish—Failure: Sohio's Biedenharn et al 1, swc 11-12n-12e, abnd 9761.

SOUTH LOUISIANA NEW PAY TESTS

Acada Parish — Egan Distillate Discovery: Sun-Sohio's E. M. Regan 3, 500 w 1525 n of sec 31-9s-1w, pay 11,874, perf 96 shots 11,874-906, flow 390 bbls 52-gr oil, 50% wtr, 10/64-in, gor 7564/1, td 13,500.

Plaquemines Parish — Bayou La Fleur Oil Discovery: Calif. Co.'s E. P. Brady et al 2, 34-16s-24e, ne offset to disc well, pay 10,445-95, perf 30 shots 10,485-90, flow 260 bbls 36.9-gr, 0.1% wtr, gor 1280/1, td 10,501.

St. Landry Parish—Port Barre Oil Discovery: Pan American Prod. Co.'s H. L. Garland 17, swc 4-6s-5e, pay 9169-91, perf 150 shots 9166-91, flow 381 nnls 37.4-gr, 10/64-in, gor 1050/1, td 9299.

MICHIGAN WILDCATS

Allegan County—Failure: Victory Oil Drlg. Co.'s Miles 1, ne se ne 6-3n-12w, abnd 1625.

Clinton County — Failure: Carter Oil Co.'s Kirkham 1, nw sw ne 32-8n-4w, Dundee 2920, abnd 2995.

Isabella County—Rolland Gas Discovery: W. Michigan Consumers Co.'s Lake 1, se nw ne 30-13n-6w, Stray sand 1335, flow 2.5 mln gas, td 1336.

Midland County—Failures: Sun's Walker 1, sw sw sw 11-16n-1w, Dundee 3729, abnd 3975.

Dow Chemical Co.'s Schreiber 1, nw se se 2-13n-2e, abnd 3791.

Montcalm County — Failure: W. Michigan Consumers Co.'s Baty 1, nw se se 17-11n-9w, abnd 1163.

Ogemaw County—Failure: Ohio Oil Co.'s Unit G-3, c ne 29-24n-4e, abnd 1780.

Osceola County—Failure: Ashby Drlg. Co.'s Ferguson 1, ne sw nw 15-18n-7w, abnd 1561.

MICHIGAN OUTPOST

Ogemaw County — Logan Gas Extension: Sun's Adams 1, c nw 12-22n-3e, Berea sand 1424, flow 540,000 gas, td 1464.

NEW MEXICO NEW PAY TEST

Lea County—Cass Field Intermediate Discovery: Continental et al's Skaggs 4-B-23, c sw se 23-20s-37e, se offset to 7700-ft pro, elev 3531, San Adres 4010, Glorietta 5210, Clear Fork (Yeso) 6310, flow 111 bbls 37-gr in 2½ hrs, with input gor 4350/1, via 1-in. using gas lift, Clear Fork (Yeso) perf at 6660-6720, 6760-6840, 2000 gals, td 700, pb 6837.

WEST TEXAS WILDCATS

Crockett County—Failure: Geo. B. Morgan et al's Todd 1, c ne ne GC&SF Ry. 55, blk UV, elev 2530, anhy 684, lime 1135, abnd 1525.

Sterling County—Failure: R. R. Herrell et al's T. P. Land Trust 1, c e½ se nw T&P Ry. 1, blk 31, 2-5-S, elev 2567, San Andres 1720, abnd 2453.

Swisher County—Failure: L. A. Helms et al's Watson 1, 330 nsl 1065, ewl BS&F 125, blk M-10, elev 3400, abnd 3620.

Tom Green County—Failure: Harley Sadler et al's Mims 3-80, 330 nsl 1500, wel se¼ H&TC Ry. 80, blk 6, elev 2362, abnd 1440.

WEST CENTRAL TEXAS WILDCATS

Callahan County—Failure: Southwestern Oil Co.'s Long 1, 150 snl 605 wel sect 77, Comal CSL, elev 1759, abnd 1767.

Jones County—Failures: Bailey Balken et al's Horn 1, 330 out nwc labor 100, Lge 126, DeWitt CSL, elev 1807, abnd 2745.

Jones-Stasney-Groover & McMordie's Alexander 1, 900 snl 300 ewl of H. Martin sur 12, abnd 1669.

Lampasas County — Failure: Danube Oil Corp.-J. R. McGill's Brister 1, 660 out of sec Lucinda Brister sur, elev 1225, Marble Falls 72, Barnett shale 504, Ellenburger 597, abnd 1501.

Runnels County — Failure: Harley Sadler (was Wm. W. Grube and Dr. Emil Ott's) Halfmann 1, 660 out nwc GH&H Ry. 501, 3 mi s by w Ballinger, elev 1697, Canyon 2620, Palo Pinto 3280, Strawn 3575, Marble Falls 3860, Mississippi 4180, Ellenburger 4298, Hickory sand 4770, abnd 4821.

Taylor County—Oil Discovery: West Central Drlg. Co. et al's C. H. Murphree 1, se se se S.P. Ry. 1, blk 9, 1¾ mi w by s of Ingram fld, elev 1889, anhy 1295, Wolfcamp 1720, base Sedwick 2130, Dothan 2190, coal 2563, Flippen 2578, Upper Hope 2720, pump 124 bbls 42-gr, 150 gals acid Cook lime perf 2622-29, td 3062.

Taylor County—Failure: Hedrick Oil Co.-Jones & Stasney's Mrs. L. Hunter 1, 990 out swc S.P. Ry. 18, blk 9, elev 2018, Noodle Creek 2920, abnd 3120.

EAST TEXAS WILDCAT

McLennan County—Failure: R. D. Burnett-Tom Emmert's Hander 1, 330 fr m/e/w 330 fr m/w/nl of 157.37-ac, 497 ewl 4750 nsl of C. Farnash sur 347, elev 511, abnd 1235.

SOUTH CENTRAL TEXAS WILDCATS

Caldwell County — Failure: Stanley A. Thompson's Lydia Dannelley 1, 330 fr swl 330 fr m/sly/wl 55-ac lse, Jonathan Burleson sur, Austin 1760, Buda li 2000, Georgetown 2100, Edwards li 2150, abnd 2160.

Dimmit County—Failure: Barnsdall's Sarah W. Hendrichson 1, 900 fr nl 990 fr swl blk 13, lot 5, 86-ac lse, Good Luck Colony sbdn, abnd 5280.

Zavala County — Failure: David S. Ring-Raymond I. Arsht's Joe L. Matthews 2, 330 fr sw&wl sect 14, I&GNRR sur, blk 2, 6000-ac lse, abnd 2230.

SOUTHWEST TEXAS WILDCATS

Starr County—Failure: George H. Echols' M. M. Garcia A-1, 1428 fr wl 2310 fr nl sur 949, on 320-ac lse, sw Rincon fld, abnd 3180.

LOWER TEXAS COAST WILDCATS

Bee County—Distillate Discovery: Bridwell Oil Co.'s J. W. Baird 1, 330 fr s&el J. G. Rountree sur 8, on 250-ac lse, 1 mi w Bridwell's Silva 1 Stillwell sd oil disc, Stillwell pay 4392, perf 4392-95, flow 997,500 gas and 18 bbls dist, 5/32-in, tp 1625, cp 1675 lbs, td 4407.

Bee County — Failure: Producers Corp. of Nevada et al's A.B. & O.H. Wolters 1, 467 nw of sel of 550-ac lse, Refugio CSL sur 11, 2½ mi sw Bridwell's Silva 1 disc, abnd 4472.

Brooks County—Distillate Discovery: Shell's Cage Ranch 1, 758 fr wl 2879 fr nl Jesus Guzman sur, 23.242-ac lse, perf 60 shots 8022-36, flow 4,500,000 gas, 80 bbls cond, ¼-in. tp 3800 lbs, cp 3000 lbs td 10,009.

Goliad County—Failure: P. R. Rutherford's Hanry Riemenschneider 1 467 fr nwl 467 fr nl 50-ac lse, 1250 fr sel H. M. Sally Lge, abnd 8010.

Jim Wells County—Oil Discovery: R. E. Fair

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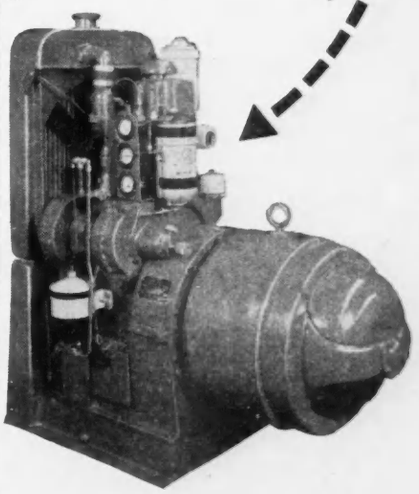

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JOS. GREENSPON'S SON PIPE CORP.
National Stock Yards, St. Clair County, Ill.

FOR SALE

Equipment from two natural Gasoline Plants

Contact
Box 220 — Ranger, Texas

NEW PIPE FOR SALE

500' of ¾" X heavy seamless. Plain end.
2,000' of 2½" Standard 5.81# Seamless and Lapweld. Plain end.
850' of 3½" (4" O.D.) x heavy 12.50# Plain end.
60' of 5½" O.D. Standard 14.61# Seamless Plain end.
150' of 5½" O.D. X Heavy 20.77# Seamless Plain end.
220' of 6⅝" O.D. X Heavy 28.57# Seamless Plain end.
3,000' of 2" (2⅜" O.D.) XX Heavy 9.02# Seamless T & C.
5,000' of 2½" (2⅞" O.D.) XX Heavy 13.70# Seamless T & C.
1,500' of 3" (3½" O.D.) XX Heavy 18.56# Seam. P & C.
1,300' of 3½" (4" O.D.) XX Heavy 22.85# Seam. T & C.

All of Above pipe on our racks at Ceiling prices subject to Prior Sale. Wire or Phone. SEMINOLE PIPE & SUPPLY CO., Ph. 5951. Corpus Christi, Texas.

FOR SALE

In East Texas Field

8 Pumping Units

3 Oilwell 28 HP Late type 3 well hook ups complete with Waukesha motors

2 Oilwell 22 HP Skid type with or without motors

1 Lufkin 28 HP Twin Crank skid type with or without motor

1 Lufkin 41 HP Skid type Twin Crank with LE Case motor

1 Lufkin 31 HP Twin Crank skid type with CHKU Waukesha motor

All this equipment guaranteed to be in good condition. Prices on application. Phone 51, Box 853, Kilgore, Texas.

KILGORE PIPE & SUPPLY COMPANY

FOR SALE

■ FOR SALE: 1—Used 12 trace Helland Research Corporation Seismograph Instrument unit, mounted on '39 Ford dual truck available for immediate delivery. Cities Service Oil Company, Patridge, Bartlesville, Oklahoma.

■ NEW 300 H.P. COMPRESSOR—Immediate shipment, one Clark 300 H.P. Model RA super 2-cycle right angle gas engine driven compressor equipped with two 15" compressor cylinders 14 x 14 with complete equipment. Brand new, never used. R. H. Armstrong, Box 1191, Texas City. Telephone 1190.

HELP WANTED

■ Party Chiefs, Chief Computers and Surveyors are needed by one of the larger seismograph companies for expansion of field parties. Excellent opportunities for top salaries to qualified personnel. Box 29, Oil Weekly, Houston, Texas.

Wanted: ENGINEER GRADUATE, under 37 years of age, with pipe line experience, for position in major pipe line company's dispatchers' office. Good chance for advancement. Address: 1302 Hunt Building, Tulsa, Oklahoma.

LEASES, DRILLING, ACREAGE, ETC.

■ North Dakota wildcat lease block in Stark and Dunn counties ten miles northeast of Dickinson. Ten year commercial leases; ten cent rentals. Interesting proposition to responsible parties. Address communications to Tom Landis, 2221-27th Street, Lubbock, Texas.

SITUATION WANTED

■ PETROLEUM ENGINEER, B.S. degree, Texas A. & M. College, 3 years field experience. Veteran. Desires position with oil firm with headquarters in Dallas. Box 28, The Oil Weekly, Houston, Texas.

■ SALES ENGINEER with extensive contacts with oil companies and industrial concerns desires manufacturer sales representative connection for Texas Gulf Coast area. Thirteen years sales experience in this field. Age 36. Graduate engineer. Home in Houston. Have car. Ample references including present employer. Address Box 26, c/o The Oil Weekly, Houston, Texas.

■ SITUATION WANTED: Land man, production or Drilling superintendent. 16 years experience would like connection where would have interest operations. Address: Box 25, c/o The Oil Weekly, Houston, Texas.

NOTICES

GEOLOGICAL MAPS

Covering the Gulf Coast of Texas and Louisiana, showing all new discoveries and all dry holes drilled to April 15, 1946. Dry holes show well-elevations, total depths, and paleontological data. Oil fields colored green, gas fields red, sulphur purple, geophysical prospects yellow, depleted fields brown. Gulf Coast of Texas in one section size 4½ ft. by 10½ ft. Scale one inch to two miles. Price on paper $50.00, on linen $75.00. Louisiana Gulf Coast covers from T3N to the Gulf drafted in two sections, scale one inch to two miles. Hand colored the same as the Texas Gulf Coast. Size of each section 3½ ft. by 10 ft. Price of each section $25.00 on paper and $37.50 on linen.

STATEWIDE MAP COMPANY
J. 2-7304
1005 Isabella No. 22 Houston, Texas

et al's Reynolds & Richardson 1, 330 fr s&el lot 19, Seefeld Farm lots sbdn, W. N. Staples sur 210, 1 mi mw Magnolia City fld, 1000-ac farmout, pay 5402, perf 48 shots 5402-14, flow 46.76 bbls 41-gr, 11/64-in, tp 610, cp 1100 lbs, td 5883.

San Patricio County—Failure: Phillips' Mrs. Ola McCann Unit 10, 330 fr n&wl 100-ac lse, W. Smith sur, abnd 10,505.

Victoria County—Failure: Taylor Ref. Co. et al's Leon Raaz 1, 990 fr nwl 330 fr nel Louis Kratz sur and 240-ac lse, 1½ mi sw E. Telferner fld, abnd 5145.

Willacy County—Distillate Discovery: Magnolia-J. S. Abercrombie Co.'s C. E. Todd 1, 1936.4 fr wl lot 6 675 fr sl lot 7, blk 1, Narcisco sbdn 4, San Juan de Carricitos Gr, 500.58-ac lse, perf 7540-60, flow 40 bbls 55-gr oil, 4 mln gas, 5/16-in, gor 97,741/1, td 11,651.

UPPER TEXAS COAST WILDCATS

Ft. Bend County—Failure: W. L. Goldston's Louis Kramer 1, 1650 fr swl 330 fr sel 160-ac tr and sect 19, E. P. Olcott (HT&C) sur, abnd 6465.

Hardin County — Failure: McCarthy O&G Corp.'s Grayburg Timber Co. 2, 980 fr sl 660 fr wl HT&B sur sect 75, 640-ac tr, abnd 9965.

Jefferson County—Failures: McCarthy O&G Corp.'s Mrs. L. Johnson et al 1, 4700 sw Fannett prod, 330 fr nl 1975 fr el 242-ac lse, W. H. Smith Lge, abnd 10,008.

Sun's Tex. Public Service Farms Co. 1, 660 fr n&el 748-ac lse, and J. W. Kirby sur, abnd 10,300.

Montgomery County — Failure: F. A. Callery's Thompson Bros. Lbr. Co. 1, 660 fr n&el R. O. Lusk sur, 80-ac lse, 6 mi nw Pinehurst fld, Cockfield 4465, Wilcox 7665, abnd 10,512.

Wharton County—Failure: H. W. Snowden's Chas. A. Davis 1, 2500 fr nel 650 fr sel 274.29-ac tr, Sylvanis Castleman Lge, abnd 5510.

UPPER TEXAS COAST NEW PAY TESTS

Chambers County—S. Mayes Distillate Discovery: Humble's Annie Frankland et al 1, 467 fr wl 52-ac tr and S. Mather sur, blk 13, 2000 nw Humble's Wallis 1, pay 9103, perf 60 shots 9110-20, flow 31.9 bbls 54.9-gr, ¼-in, gor 33,300/1, td 9900.

Liberty County—S. Liberty Oil Discovery: Sun's Shade Fee 12, 2297 fr el 50 fr nl 50-ac tr, 100 e of No. 1 abnd well, Cook Mt, pay 4585, perf 119 shots 4585-4615, flow 103.38 bbls 37.2-gr, gor 1291/1, td 4900.

WYOMING WILDCAT

Uinta County—Distillate Discovery: Mountain Fuel Supply Co.'s Unit 1, ne sw nw 8-16n-112w, Church Buttes (deepest well in Rocky Mt. region), 240 bbls dist, 10.12 mln gas, td 12,894.

Repressuring Studied

A repressuring program for the Bartlesville Sand zone of the West Moore and South Moore fields of northern Cleveland County is under study by engineers, A. E. Deen, engineer of the Mid-Continent Petroleum Corporation, reported to the Oklahoma Corporation Commission. Deen's company is installing a natural gas booster station in the area now, to serve both fields, and when materials are available, the repressuring programs will be started, it was indicated.

Gulf Buys Leases

Gulf Oil Corporation increased its lease holds in Cimarron County, Oklahoma, with purchase of 18 sections in 1n-1e-Cm, and 2n-1e-Cm, in the extreme southeastern portion of the County.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, takes flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 Houston 1, Texas

ARKANSAS

Ouachita County: C. A. Lee's Morgan 1, ne ne sw 2-15s-19w, lcn.

CALIFORNIA

Kern County: B. & R. Oil Co.'s Poso 4, 14-27s-27e, McVan area, dr.

Barnsdall Oil Co.'s Bates 2, 20-25s-19e, Devils Den area, lcn.

Bender Oil Operations' Kelley 2, 20-28s-27e, Kern Front area, dr.

Continental's BVA 1, 8-32s-25e, Buena Vista Lake area, lcn.

L. S. Gilmour & Assoc's Tejon 2, 25-32s-29e, Comanche Point area, ru.

Gene Reid Drl. Co.'s K.C.L. 1, 15-26s-28e, Domnion area, ru.

Pacific O&G Dev. Corp's Cantleberry 72, 22-25s-27e, Jasmine area, lcn.

Kings County: Ridge Pet. Corp.'s 13, 17-24s-18e, Pyramid Hills area, dr.

Tulare County: Pacific Central Oil Co.'s Finch 14, 32-23s-23e, Trico area, dr.

Solano County: Standard's Scally Est. 1, 10-4n-1w, Potrero Hills area, dr.

Honolulu Oil Corp. Barnsdall's Liberty Farms 3, 7-5n-3e, Solano County area, lcn.

Los Angeles County: Delaney Pet. Co.'s Delaney-Cinnabar 1, 24-2s-11w, E. Whittier area, rig.

San Bernardino County: Grayco Oil Co.'s Mohala 1, 13-3s-8w, Chino area, lcn.

ILLINOIS

Coles County: O. O. Borden's Temple 1, 3n-14n-11e, lcn.

Bond County: Walter Duncan et al's Root 1, se se ne 16-6n-4w, dr.

Clay County: J. L. Block's Stanley 1, n2 se nw 8-4n-8e, dr.

Cumberland County: Central Pipeline's Myers 1, 36-9n-9e, lcn.

Nat'l Assoc. Pet.'s Young 1, nw nw sw 4-10n-7e, lcn.

Jasper County: C. J. Simpson's Bayles 1, nw se ne 36-7n-9e, lcn.

Marion County: Sohio's Hawkins 1, se se nw 29-1n-4e, lcn.

Paul Doran's Betts 1, 4-4n-1e, lcn.

Shelby County: W. R. Britton's Kensil Heirs 1, ne ne se 21-11n-4e, lcn.

Wabash County: Hayes Drlg. Co.'s Fischer 1, sw ne nw 7-1s-13w, lcn.

KANSAS

Decatur County: Helmerich & Payne's Jorn 1, se se sw 28-2s-28w, woc.

Ottawa County: Doley's Shubert 1, se se se 32-12s-2w, woc.

Pawnee County: J. M. Huber's Blackwell 1, sw sw sw 23-22s-16w, sur hole.

Pratt County: Pulse-Hershfield Drlg.'s Black 1, se ne nw 6-26s-11w, lcn.

Rice County: Bridgeport Oil's Boldt 1-A, ne ne nw 19-18s-9w, rur.

Sedgwick County: Kingwick Oil's Bartholomew 1, se se sw 30-27s-4w, rur.

NORTH LOUISIANA

Natchitoches Parish: H. J. Schmitz-A. W. Warner's Smith 1, sw ne sw 33-9n-9w, 7500-ft test.

Richland Parish: Roy Fisher-A. W. Hutchins' Tensas Delta Land Co. 1, c nw ne se 20-14s-6e, 4500-ft test.

Sabine Parish: H. J. Kirk's Long Bell Pet. Co. 1, ne 4-6n-18w, 2500-ft test.

SOUTH LOUISIANA

Cameron Parish: Texas Co.'s Lutcher-Moore Lbr. Co. 1, 661 s 413 w sec sect 13, in 24-14s-12w, 2½ mi ne Mud Lke gas-cond prod, 11,000-ft test.

Terrebonne Parish: Union of Calif.'s R. R. Barrow 1, 2500 s 330 e of nwc sect 22, in 1-17s-18e, ½ mi se Houma gas-cond prod, 10,550-ft test.

MICHIGAN

Allegan County: J. W. Lang C.'s Gerritt 1, sw ne nw 11-3n-15w, dr.

Montcalm County: West Michigan Consumers Co.'s Robinson 1, ne ne sw 28-11n-9w, dr.

MISSISSIPPI

Clarke County: Sun's Long Bell Pet. Co. 2, nwc ne 17-2n-17e, lcn.

MONTANA

Flathead County: H. L. Poston's No. 1, 7-26n-21e, Kalispell area, dr 300 ft.

NORTH TEXAS

Archer County: C. G. Butts et al's A. Penartz 1, 200 nsl 750 wel of sect 19, blk 4, Clark & Plumb sur, 1300-ft rotary test.

F. P. Timberlake & H. M. Kelleher's L. F. Wilson 1, lot 766, 750 nsl 1200 ewl sect 32, ATNCL sur, 1600-ft rotary test.

G. E. Kadane & Sons' L. F. Wilson 1-B, 330 out nwc lot 9, sect 31, ATNCL sur, offset shallow new pay test, 4500-ft test.

Cooke County: Barker & Blaine's O. Wilson 1, 900 w 1200 n of nwc of Joe Wiseman 120-ac tr, or 4900 snl 2300 wel of E. Reed sur, 1200-ft cable test.

J. H. Hood-B. O. M. Oil Co.'s H. Luttmer 1, 2111 fr swl 1500 fr sel of 200-ac tr and I. Saunders sur, 3 mi sw Muenster, 2250-ft rotary test.

Wichita County: D. H. Bolin et al's Mary Blainer 1, 150 out nec of 100-ac tr, or 3200 nsl 2400 ewl Lewis Powell sur 2050-ft rotary test.

D. H. Bolin et al's J. M. Goins 1-A, 800 ewl 1600 nsl blk 48, Red River Valley Lands sbdn, 2050-ft rotary test.

LOWER TEXAS COAST

Jackson County: H. H. McFarland's W. F. Paulet al 1, 541 fr nwl 2450 fr sel 4370 ne of w cor, 320.52-ac lse, in H. Hunt sur, 3500-ft test.

Karnes County: Gulf Shore Oil Co. et al's Alvin Wagener 1, 467 fr n&el of 102-ac lse, Wm. Hunter sur, 6500-ft test.

Kleberg County: Sun's E. G. Canales 4, 660 s fr nl 3294-ac lse, 4643 w of el CCSD&RGNG sur 339, 10,355 e ne dry hole 1, 1 2/3 mi se Canales fld, 11,000-ft test.

Live Oak County: H. H. Presnal's I. W. Griffith 1, 330 fr ne&sel 203.4-ac lse, Sparks sur, ne N. Jacobs fld, 1250-ft test.

SOUTH CENTRAL TEXAS

Atascosa County: Humble's John Sandeen 1, 467 fr s&el lot 47, 2300 fr el 467 fr sl J. P. Gorman sur 1189, Jourdant outpost test 8200 w sw sw extension well, 7400-ft test.

Bastrop County: Dunnan & Gratehoust's McNiel Chapman 1, 810 fr n&sl 1000 fr wl 93-ac lse, Ignatio Sartuche sur, 4500-ft test.

SOUTHWEST TEXAS

McMullen County: Brown & Brown's Wm. Hubbard 1, 3600 fr sel 1000 fr swl Michael Nell sur 55, dr below 800.

Webb County: Dulaney Oil Co.'s State of Tex. 2, 330 fr swl 1320 fr sel state sur 838, 330 nw dry hole 1, on 69½-ac lse, 1 mi sw Aviator fld, ru 2000-ft test.

Hamilton & Logan's de la Garza 1, 330 fr s&wl sw nw BS&F sur 676 on 41.8-ac lse, 3000-ft test.

UPPER TEXAS COAST

Chambers County: Kenneth Owens' W. L. Moody, Jr. 1, start sec G. Long sur go s 660 th w 660 to lcn in G. W. Shelton sur, 1½ mi e se S. Msyes fld, 9500-ft test.

Galveston County: Stanolind's State Land Tr. 2-1, off sw flk High Island Dome, 330 fr nl 7445 fr el Tr. 2, Gulf of Mexico, 7000-ft test.

Liberty County: Ohio Oil Co.'s Kirby Lbr. Co. Tr. 3-1, 5710 sw Kirby Tr. 5-1 disc well, 10,839 fr wly/wl 3161 fr wly/sl James McCoy Lge, 10,500-ft test.

WEST TEXAS

Andrews County: Texas Gulf Prod. Co.'s University-Forest 1, lse 3, 2025 nsl 1980 wel sect 17, blk 9, 5500-ft San Andres test.

Coke County: Harley Sadler et al's J. B. Mims 1-39, 330 wel 990 nsl T&P Ry. 39, blk W, 1800-ft cable test.

Garza County: Plymouth Oil Co.'s J. B. Slaughter 1, ne ne nw T&NO Ry. 32, blk 2, 4500-ft Clear Fork test.

Hockley County: Honolulu Oil Corp.'s Burson 1, 440 wel 2200 snl R. M. Thompson sect 8, blk A, 7500-ft Clear Fort test.

WEST CENTRAL TEXAS

Brown County: S. B. Messer et al's W. C. Crane 1, 150 snl 3618 ewl of 370-ac tr, or 1200 nsl 3618 ewl of Thos. Pratt sur 107, 2000-ft test.

Shackelford County: C. J. Myers et al's E. E. Grothe 1, 2700 nsl 850 ewl T&PRy. 6, blk 11, lcn.

Taylor County: Great Lakes Carbon Corp.'s H. D. Hopkins 1, 1650 snl, 990 wel S.P. Ry. 21, blk 2, 2750-ft rotary test, sp.

WESTERN CANADA

Alberta Foothills Belt—Quaich: Quaich Oil Corp.'s Quaich-Globe 1, sw lsd 12 35-9-3w5th, dr.

Saskatchewan Plains—Vera-Unity: Bata Petroleum's No. 14, lsd 14 28-38-22w3rd, dr.

Osage Tracts Leased

A total of $31,600 was paid in leases for 36 Osage Indian tracts at a recent Osage County sale in Pawhuska. Highest price paid was for a quarter section tract in the SW of 33-26-6e, near the south end of the main Burbank field, by Kewanee Oil Company, Tulsa. Price was $9050.

Application Continued

The Oklahoma Corporation Commission has continued until July 24 or 26 the application of The Carter Oil Company for 160-acre well spacing in the Washington pool of McClain county, at the company's request. It was stated that the company is drilling more wells in the area and feels that additional subsurface information is required before pushing the spacing application.

DAN L. CLARK W. M. AVERILL RUPERT COX

DAN L. CLARK DRILLING CO.

Drillers of

OIL AND GAS WELLS

•

POWER AND STEAM RIGS

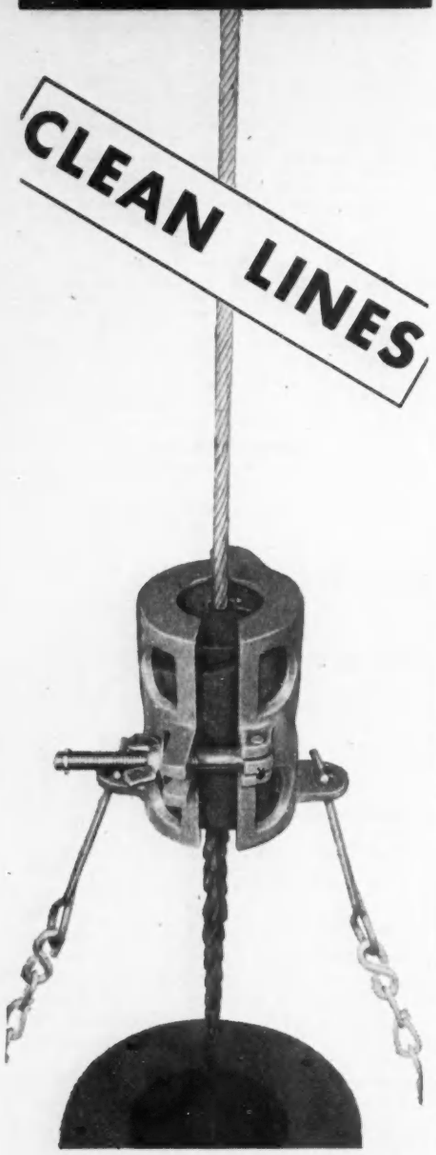
NIXON BUILDING

CORPUS CHRISTI, TEXAS

Local 7746-7747 Long Distance 95

"Best Bet Yet"

CLEAN LINES



A clean wire line helps your crew. They can work safer and better on a clean floor, free from drippings. With a Patterson-Ballagh Wire Line Wiper the line is stripped completely of mud and oil. A compact steel housing contains a spiral rubber which is inexpensive and easily replaced. The rubber wipes the line as it comes out of the hole. Spark-proof. Use one on every well.

Now made of natural rubber.

See Composite Catalog

Patterson-Ballagh
WIRE LINE WIPERS
Los Angeles 1 Houston 10 New York 6

SQUEAKS from the BULL WHEEL

Poet's Nook

Jack and Jill fell down the hill,
A stunt that's mighty risky;
If water made them act like that
I think I'll stick with whiskey.

Encore

Said a silly young lady from Wales,
"A smell of escaped gas prevails."
Then she searched with a light,
And later that night,
She was picked up in 17 pails.

This Curious World

People wouldn't get divorced for such trivial reasons if they hadn't gotten married for such trivial reasons.

In poker, it's always darkest before you've drawn.

Proof that two can live as cheaply as one is offered by the horse and the sparrow.

An honest confession may be good for the soul but it's rough on the reputation.

A girl doesn't mind losing her heart to a fellow, but she hates to have him search for it.

"Most people can't stand prosperity," goes the old saw. And the sad part is, most people don't have to.

Last Nights, Too

"He used to be seen at more first nights than any other man in town."

"Dramatic critic?"

"Nope, bellboy at Niagara Falls."

Goose Him, Maybe

"Waiter, have you any wild duck?"

"No, sir, but we can take a tame one and irritate him for you."

Petter, No Putter

"How about a round of golf tomorrow?"

"Sorry, but it's the kid's day off and I've got to take care of the maid."

Temptations, Maybe?

"Nancy, my child, you've been very naughty today, so when you say your prayers I want you to ask God to make you a good girl tomorrow."

"Why, mamma? What's doing tomorrow?"

Considerate Wife

"John, let's don't let the people on the train know we've been married less than an hour."

"Okay. You read a book and I'll go down and talk to the blonde in Section 13."

Fair Question

She awoke and punched her husband. "John, there's a mouse in the room. I can hear it squeaking."

"Well, what do you want me to do, woman? Get up and oil it?"

On the Spot

"Five rookies have broken out!"

"Did you get the captain?"

"No, I got the doctor—I think it's measles."

Cause for Kicking

"Who can use the word tidbit in a sentence?"

"I can, teacher. The calf got kicked when his mama got her tidbits."

Philosogrin

Don't worry if your job is small
And your rewards are few;
Remember that the mighty oak
Was once a nut like you.

Just Like a Woman

"Hello, this you, Clara? Say, I've got a laugh for you. I proposed to you last night but now I've forgotten whether you said yes or no."

"Well, for heaven's sake, Jim. You're as forgetful about little things as I am. I knew I gave the brushoff to some bum or other last night, but I had completely forgotten who it was."

The Fuller Life

A boy who wants to make the news
Aspires to fill his father's shoes.
His sister aims for something better.
She hopes to fill her mother's sweater.

Pretty State of Affairs

In civilian air circles a "short" is a nonpriority passenger who must be removed from a flight if a heavy priority passenger comes along. If possible, what is known as "protection" is given him. Arrangements are made to continue the journey by a later flight, by train, pony cart or whatever is available.

Recently a young stewardess, unfamiliar with flight vernacular, went to work for American Airlines. An hour out of Chicago she received by radio the following instructions: "Prepare to remove shoots at Detroit. No protection." For a while she was quite unhappy about it all.

You're "Safe"
WHEN YOU CARRY A
90-UL ECOLITE

Don't wait—get this marvelous new safety lantern with broken bulb ejector right away.

SAFE in
HAZARDOUS PLACES

TESTED AND RECOMMENDED BY UNDERWRITERS' LABORATORIES

- Sealed beam construction.
- Throws bright beam 1500 feet.
- Large handle and pivoting feature gives you light where you need it and both hands free for work. Now at jobber and supply stores.

ECONOMY ELECTRIC LANTERN CO.
3100 W. Cherry St. Milwaukee, Wis.

MEN IN THE INDUSTRY NEWS

R. Elmo Thompson, Tulsa, executive vice president of Sunray Oil Corporation, has resigned and has been appointed vice president of the First National Bank and Trust Company, Tulsa. Thompson, who served as executive vice president of the oil company for seven years, took over his new duties June 1. No announcement has been made as to who will fill Thompson's place at Sunray.

R. Elmo Thompson

»

Dr. H. M. E. Schurman, The Hague, Netherlands, head of exploration and geological work for all Shell interests, is now touring the United States, conferring with company officials. He attended a conference in Tulsa recently with **Ralph B. Roark,** vice president of Shell Oil Company, Incorporated, in charge of Mid-Continent operations.

»

Major William E. Dillon, geologist in the geological department of Tide Water Associated Oil Company, San Francisco, recently returned to his position with the company. Dillon was called to active duty as a second lieutenant in March, 1941, and was assigned to the Ferry Command of the U. S. Army Air Force, where he had duty in various fighting areas, principally in the Pacific phase of the war.

»

James C. Graves of Saginaw, president of the Basin Oil Company, and **T. R. Bowler** of Clare, Michigan, resident attorney for Sun Oil Company, were reappointed for new three-year terms on the State Oil Advisory Board by the State Conservation Commission. Graves has been a member of the board since 1940 and Bowler has served since 1943.

»

Clayton Wallace, development superintendent, The Carter Oil Company, has been transferred from St. Elmo, Ill., to Mt. Pleasant, Mich., to head the company's new development and producing organization.

»

M. M. Kornfeld, formerly district geologist of Mid-States Oil Corporation, Houston, has opened consulting offices in the Southern Standard Building, Houston.

»

Horace B. Clay, general counsel for Wilcox Oil Company, Tulsa, delivered the commencement address at the Culver-Stockton College, Canton, Mo., June 3. Clay was a graduate of the college in 1903.

»

William A. Friley, with The Carter Oil Company at Ames, Iowa, has been transferred to Oklahoma City.

»

Burton W. Whiteley, a former Tulsan, has joined the engineering staff of Sohio Petroleum Company at Oklahoma City.

H. B. (Doc) Kniseley, editor of The Carter Oil Company's *Link,* monthly magazine, and who recently was elected vice president of the National Council of Industrial Editors at the annual convention in Boston, has resigned his position and will become head of the information department of the *Sunray News,* effective June 15. Kniseley will succeed **Miss Leatrice Hollenbeck** as head of the *Sunray News* information department and editorial director of the publication.

H. B. Kniseley

»

R. J. James, professor of mechanical engineering at the University of Oklahoma, addressed the Oklahoma City Engineers Club on "Engineering Fundamentals."

»

W. C. Nuckolls, scout with The Carter Oil Company for seven years, has been transferred from the North Louisiana area to Oklahoma City, replacing **Luther Clark,** recently moved to the Land Department at Rawlings, Mont.

»

B. D. Bounds of Phillips Petroleum Company, has been transferred from Oklahoma City to the Evansville, Ind., office as petroleum geologist.

»

R. C. (Chuck) Earlougher of the Earlougher Engineering Company, Tulsa, has been named chairman for the June 19 meeting of the Water Flood Operators Committee, a voluntary group that meets the third Wednesday of each month at Independence, Kansas, to exchange mutual ideas on secondary recovery operations with water.

»

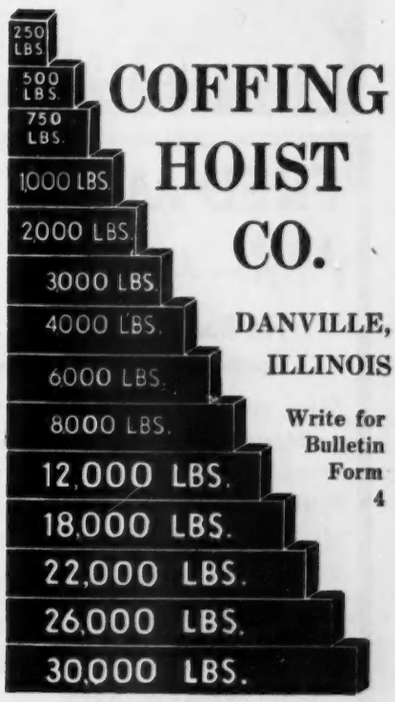
William Wirt Henry, Tulsa petroleum geologist, president of Continental Corporation and vice president of Atlantic Oil Corporation, announced the opening of offices for general practice of consulting geology specializing in oil and gas investments, royalties, leases and drilling blocks. The new office is located in the Kennedy Building.

Correction

In reporting the death of Harold D. Crawford in the May 13 issue of THE OIL WEEKLY, it was erroneously stated that the Crawford Tank and Supply Company was merged with the Maloney Tank and Supply Manufacturing Company to form the Maloney-Crawford Tank and Manufacturing Company, Tulsa. The correct statement is that the Union Tank & Supply Company is a successor to the Crawford Tank & Supply Company, and the Butler Manufacturing Company, together with E. Lloyd Byer, president of Union Tank & Supply Company, purchased from Harold Crawford his interest in the Crawford Tank and Supply Company.

COFFING HOISTS

COFFING HOISTS are built in a wide range of capacities. The SAFETY-PULL Ratchet Lever Hoists come in capacities from ¾ to 15 tons. The QUIK-LIFT Electric Hoist is built in 28 different models with capacities ranging from 250 to 4000 pounds and the MODEL Y-C Spur Geared Hoist is built in seven capacities from ½ to 5 tons. As more materials become available more COFFING HOISTS will be built to meet your requirements. Contact your supplier for detailed information.



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HOUSTON, TEXAS

MEN IN THE INDUSTRY NEWS

Fred Parks, Bethlehem Supply Company, recently was appointed resident manager at Houston, succeeding **T. R. Miller,** resigned. Parks began his career in the supply business with the Bridgeport Machine Company, Wichita, Kansas, serving as manager of stores. He joined Bethlehem in 1939 as city salesman in Houston, and has since held positions as resident manager at Dallas, district manager of the Arkansas-Louisiana-Texas district with headquarters in Dallas, and assistant to division managers, Dallas.

Fred Parks

»

Henry Rogatz, petroleum geologist, has reopened his office in the Southland Building, Dallas. He served with the Army Air Forces.

»

Colonel W. F. Rockwell, board chairman and president of Rockwell Manufacturing Company, has been elected to the board of directors of United Engineering and Foundry Company, Pittsburgh. United Engineering manufactures heavy duty machinery used by the steel industry.

»

A. P. Hall has been elected vice president of American Chain & Cable Company, Inc. Before joining the company in 1944, he had been in the steel industry 22 years. He will continue his present duties as general manager of sales.

»

W. K. Perkins, former assistant manager of sales for International Harvester Company's motor truck division, has been appointed manager of sales. **J. T. Sullivan** has been named central district sales manager to succeed **W. A. Riggs,** transferred to the northwest district. **R. R. McDonald** has been put in charge of the new motor truck branch at Salt Lake City.

»

Al Hardy, formerly with the War Production Board, Tulsa, and the American Manufacturing Corporation, Dallas, has been named chief engineer for W. C. Norris Manufacturer, Incorporated, Tulsa.

»

J. Ralph Miller has joined Lane-Wells Company as district sales engineer at Shreveport. For the past ten years he has been connected with Halliburton Oil Well Cementing Company.

»

Garrett A. Connors, vice president in charge of industrial and public relations for Pittsburgh Steel Company, is now in charge of the company's sales promotion department which has merged with the sales department. The change followed the resignation of **Elmer T. Wible,** former manager of production promotion.

G. E. Gude, Jr., sales manager for Wyatt Metal & Boiler Works with headquarters in Houston, has been elected to the board of directors and made a vice president of the company. Born in Amsterdam, Holland, he came to the U. S. at the age of 15, and in 1913 was graduated from the University of California. His first association with Wyatt was in 1930, when he served as New York sales representative. He was transferred to Houston in 1934 as assistant sales manager and became sales manager in 1936, in which position he continues.

G. E. Gude, Jr.

»

Leo A. Guttero and **Eugene Miller** have been promoted to handle sales and service divisions of Western Gear Works. Guttero will serve the Los Angeles and Southern Basin area, and Miller the San Joaquin and Coastal areas.

»

Ralph Steinman, scout for Sinclair Prairie Oil Company, has been transferred to Wichita Falls, Texas. His duties in the Tulsa office of the company will be taken over by **Lawrence Myers.**

»

Joe Castles, representing the American Iron & Machine Works Company in the Mississippi-South Louisiana district, has been transferred to Casper, Wyo., to cover the Rocky Mountain territory. **Harry K. Conley** will take over the Mississippi-South Louisiana territory with headquarters in Natchez.

»

Dr. Gustav Egloff, director of research, Universal Oil Products, Chicago, will address the Southwest Regional Chemurgic Clinic in Oklahoma City June 3 on petroleum and natural gas.

»

Frederick A. Stevenson, president of American Car and Foundry Company, has been elected a member of the executive committee of the board of directors.

»

James E. Hughes has been appointed chief engineer for Western Supply Company, Tulsa, and will be in direct charge of heat exchanger sales. He previously was connected with the chemical products division of Phillips Petroleum Company, where he became experienced in patent licensing as a member of the Perco Division. He spent two years in Washington with PAW as chief of the pressure vessel section.

James E. Hughes

MEN IN THE INDUSTRY NEWS

R. C. (Bob) Glover, district manager for Baker Oil Tools at Olney, Ill., since 1938, has been appointed Tulsa district manager. Glover joined the company in California in 1929 after having been employed by Hancock Oil Company's drilling and production departments for many years. **E. J. (Jay) Whitney** of Houston, has been transferred to Olney as district sales engineer for Baker, to succeed Glover. Whitney has been with the company's sales and service department since 1936 in the Texas Gulf Coast area, with the exception of the interval in the U. S. Navy from 1942 to 1945.

»

Jasper Van Opynen, Jr., has been appointed vice president in charge of manufacturing operations for all divisions of the Portable Products Corporation, Pittsburgh. He will be in charge of engineering and production.

»

L. W. Stolte has been elected secretary of Fairbanks, Morse & Company to replace **Fred C. Dierks,** who retired after 45 years of service. Stolte joined the company in 1928 as a bookkeeper in the Cleveland branch, and was cashier and credit manager of the branch by 1933. In 1945 he was transferred to company headquarters in Chicago as general credit manager, which position he now holds in addition to his duties as secretary.

»

Edwin Ross has moved from Los Angeles to Houston as sales manager of the southern region of the Mid-Continent Division of Baash-Ross Tool Company. **Inky Wotkyns** has been transferred from Houston to the company's headquarters in Oklahoma City as sales manager in charge of the northern region of the Mid-Continent Division.

»

M. C. Niblack has been appointed district sales manager of the Oklahoma City area for Industrial Supply Company, Wichita Falls, Texas. He has been active in the oil field supply business for 20 years, serving with the Crane Company, the International Supply Company, and Bethlehem Supply Company before joining Industrial Supply Company.

Deaths

T. T. Blakely, 73, pioneer Oklahoma oil operator, died in Oklahoma City May 21 after a long illness. A native of Wisconsin, he entered the oil business in Okmulgee, Okla., in 1918. He opened the Blakely pool in Okfuskee County in 1923, and a second Blakely pool the following year.

»

Reuben Johnston Slingluff, 65, former Tulsa resident and retired Phillips Petroleum Company employe, died May 18 at the Veterans' Hospital in Muskogee, Okla., following a lengthy illness.

»

William Morgan Porter, retired employee of the Westheimer-Neustadt Oil Company of Ardmore, Okla., died of a heart attack in Columbia, Tenn., May 17. He had been connected with the oil firm for 20 years.

»

Stephens Lorain Lankford, 44, Clemscot, Okla., oil worker, died in Duncan May 23. Born at Telephone, Texas, Lankford had lived in and near Fox, Okla., for 23 years. He was a "field boss" and had been employed by various companies during his years in the oil business.

»

John E. McKinzie, deputy oil and gas supervisor for the Texas Railroad Commission in the Abilene district, died May 26.

»

George B. Rainey, 52, former employe of The Texas Company died in Tulsa May 21, less than a month after he retired because of ill health. He was employed by the company as a machinist, and had served 24 years. Before joining Texas he was a foreman at the old Cosden refinery, Tulsa. A native of Paris, Texas, he moved to Tulsa in 1916 from Moyer, Okla.

J. M. English, 36, president of J. M. English Truck Lines, Inc., Houston, died May 28 at Columbus, Texas, of a bullet wound received accidentally. He had been in the trucking business for nearly 20 years. During the war he was a first lieutenant in the Transportation Corps.

»

Roy Colpitt, Okmulgee, Okla., independent oil producer, died May 20 at Okmulgee, following an extended illness.

»

Joseph A. Chanslor, 78, pioneer mining and oil man of California, died in San Francisco May 20. Chanslor, who, with **C. A. Canfield,** is credited with having discovered and produced the first crude at Coalinga, was one of the organizers of the Associated Oil Company in 1901, and was president of that company from 1902 until 1910. Following the merger of his company with Tide Water Associated Oil Company in 1936, he became a director of the new company until February, 1945, when illness forced him to retire.

»

Charles Richard Morgan, 57, employe of The Texas Company for 24 years, died in Tulsa may 22 of a heart ailment. Morgan, born in Pine, Mo., moved to Tulsa in 1921 and joined the company. At the time of his death he was a night plant foreman.

»

M. E. (Jim) Wadsworth, 55, died May 3 in Longview, Texas, of a heart attack. He had been with The National Supply Company for 25 years.

»

Aaron Steele, 68, retired Tulsa oil man, died May 28 following an extended illness.

An A.A.P.G. Publication!

TECTONIC MAP
of the
UNITED STATES
1944

Prepared under the Direction of the Committee on Tectonics, Division of Geology and Geography, National Research Council.

Chester R. Longwell, Chairman, Philip B. King, Vice-Chairman.

Charles H. Behre, Walter H. Bucher, Eugene Callaghan, D. F. Hewett, G. Marshall Kay, Eleanora B. Knopf, A. I. Levorsen, T. S. Lovering, George R. Mansfield, Watson H. Monroe, J. T. Pardee, Ralph D. Reed, George W. Stose, W. T. Thom, Jr., A. C. Waters, Eldred D. Wilson, A. O. Woodford.

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Geologic structure, as evidenced and interpreted by a combination of outcropping areas, bedrock, surface disturbance, and subsurface deformation, is indicated by colors, symbols, contours, and descriptive explanation. Igneous, metamorphic, and selected areas of sedimentary rock are mapped. Salt domes, crypto - Volcanic disturbances, and submarine contours are shown. The base map shows state boundaries, rivers, a pattern of cities, and 1-degree lines of latitude and longitude.

The scale is 1:2,500,000, or 1 inch equals 40 miles. Printed in 7 colors on 2 sheets, each about 40 x 50 inches. Full map size is about 80 x 50 inches.

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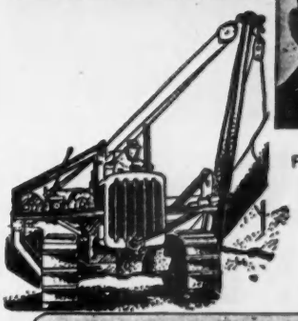

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Diesel Engines

"Standard Practices," printed in 1935 by the Diesel Engine Manufacturers Association, has been revised because of progressive developments in the Diesel engine manufacturing industry during the last decade. The new book is the product of member companies of the association, which coordinated their engineering and sales departments and delegated representatives to rewrite the former treatise. In a series of five meetings the content of the former printing was completely rewritten.

Chapter headings of the new book, "Standard Practices for Stationary Diesel Engines," give an idea of its scope: "Definitions," "Standard Performances and Equipment," "Diesel Engine Construction," Governors and Speed Regulation," "Torsional Vibrations and Critical Speeds," "Intake and Exhaust Systems," "Cooling Water Systems," and ten other interesting and important chapters. The book was written primarily for consulting engineers, buyers and users of diesel engines, and manufacturers of engines, and of engine parts and accessories. It is anticipated that a number of colleges and universities which teach mechanical engineering will use the new work as a reference. Illustrated with 25 drawings and charts, the book may be obtained from the Diesel Engine Manufacturers Association, One North La Salle Street, Chicago 2, for $2.50.

International Trade

The International Trade Committee of the Committee for Economic Development has published a "Handbook On International Trade" to help American businessmen proceed with greater assurance and opportunity for success.

The handbook sets forth practical steps to which a business man—whether already engaged in international trade or just planning to enter the international market for the first time—should give consideration. It is divided into sections dealing with special problems of the manufacturer, the wholesaler, the jobber and the retailer. It presents a guide to the method of gathering adequate information on international trade, making correct decisions of policy in matters of foreign trade and making sound plans for engaging in foreign trade.

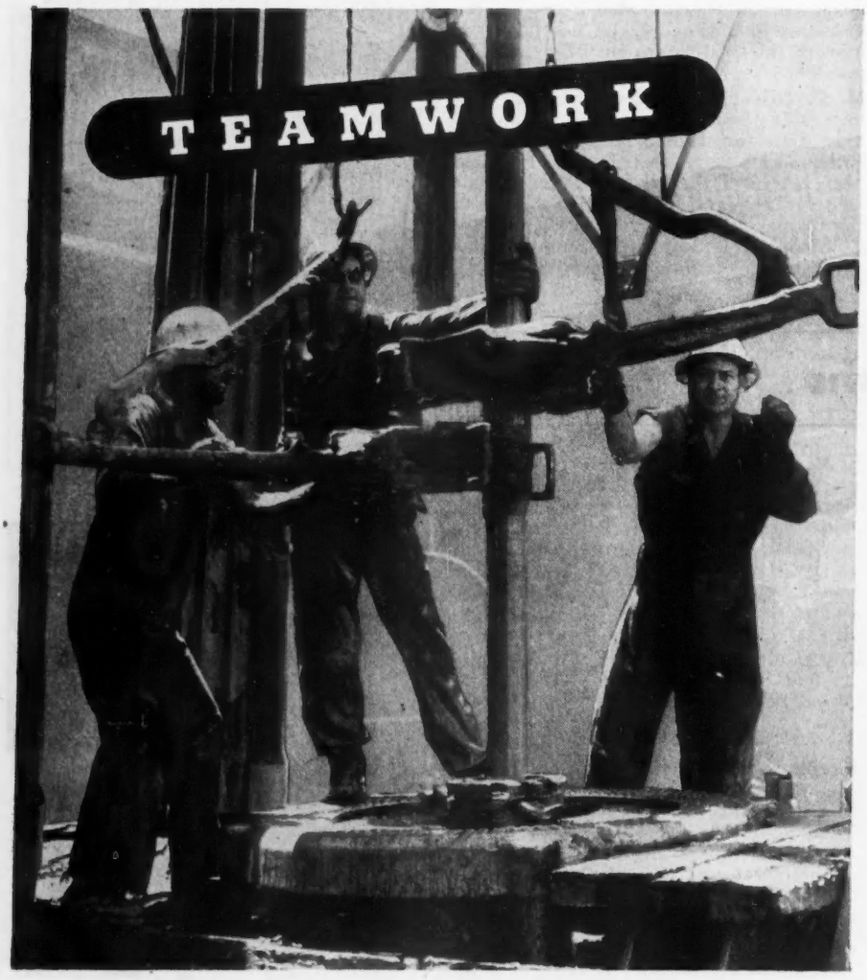
Priced at 50 cents, the handbook may be obtained from the Committee for Economic Development, Field Development Division, 285 Madison Avenue, New York 17.

Pipe Corrosion Studies

Replacement of underground pipe lines made unserviceable because of corrosive action of soils has been estimated to cost $200 million a year in the U. S. alone, the National Bureau of Standards, Department of Commerce, recently announced.

To help minimize this great economic loss, the Bureau has carried on a continuous investigation over a period of 25 years. The results of this investigation are presented in a new publication—Circular C450, prepared by Hirk H. Logan, head of the Underground Corrosion Section. This bulletin presents results of studies of soil corrosion on a wide variety of metal pipes, and discusses these results in relation to soil analysis and metal analysis.

The Bureau's studies indicate that ferrous materials in common use do not differ greatly in resistance to corrosion. However, ferrous alloys containing rather high percentages of nickel and chromium are definitely superior. Cathodic protection is shown to retard or prevent corrosion under most soil conditions. Methods for applying this electric type of protection are briefly described. Six appendices give details of test methods and apparatus referred to in the text of the publication. Copies of Circular C450 may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., at $1.25 each.



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Seismograph Service Corporation Organizes London Subsidiary

A new subsidiary, to function within the sterling bloc area, was recently formed in the United Kingdom by Seismograph Service Corporation, of Tulsa, G. H. Westby, president, announced. Foreign headquarters of the new corporation, to be known as the Seismograph Service, Limited, will be located in London.

E. J. P. van der Linden

E. J. P. van der Linden, formerly with the Seismograph Service Corporation, has been named managing director of the London office, James E. T. Woodburn, former chief geophysicist of the Skelly Oil Company and a former technologist for the Tulsa firm, will be manager of field operations, and Victor Graf, a technologist for the Tulsa firm, will be manager of instrumentation.

In addition to van der Linden, the directorate of the subsidiary will include Westby, T. A. Manhart, executive vice president of Seismograph Service Corporation, and John S. Carlson, general counsel and secretary of Seismograph Service Corporation.

Du Pont Vice President Retires; Other Personnel Changes Made

Jasper E. Crane, vice president and member of the executive committee of E. I. du Pont de Nemours & Company, has retired and Dr. Crawford H. Greenewalt, assistant general manager of the pigments department, succeeds him.

James B. Eliason's retirement as a vice president and treasurer of the company and his replacement by Walter J. Beadle, first assistant treasurer, were also announced. Crane and Eliason will continue as members of the board; Eliason will also retain his membership on the finance committee. Greenewalt was already a director of the company. Beadle was elected both vice president and member of the board. Beadle will be succeeded as first assistant treasurer by T. C. Davis.

The National Supply Company Opens Store in Albany, Ky.

The National Supply has opened a store at Albany, Ky., centrally located to the new and active oil fields of the state. J. Gordon Martin is the local store manager.

$200,000 In Prizes Offered by Lincoln Arc Welding Foundation

The "Design-for-Progress" Award Program, sponsored by The James F. Lincoln Arc Welding Foundation, will award 452 winners with prizes totaling $200,000 in a nation-wide contest ending June 1, 1947. The program is intended to encourage study and preparation of papers on design, research and education, application and use of arc welding. The current activity is the sixth award program conducted by the Lincoln Foundation during the past several years and includes the recent "Undergraduate Award and Scholarship Program," "Award Program for Textbooks on Machine and Structural Design," and "The Agricultural Award and Scholarship Program."

An exceptional opportunity for those engaged in the design, manufacture or construction of any type of petroleum machinery or parts is offered. "Petroleum Machinery" is admitted as a division of the "Industrial Machinery" classification and includes any type of machinery used in the petroleum industry. Four awards totaling $1600 will be made in the "Petroleum Machinery" division, while the classificational awards amount to $5800 in the "Industrial Machinery" classification. An author entering his paper in the above division, not winning any other award, may still win one of the 217 honorable mention awards of $100 each. The three main awards covering all classifications amount to $22,500. Complete details may be obtained by writing the secretary, The James F. Lincoln Arc Welding Foundation, Cleveland 1.

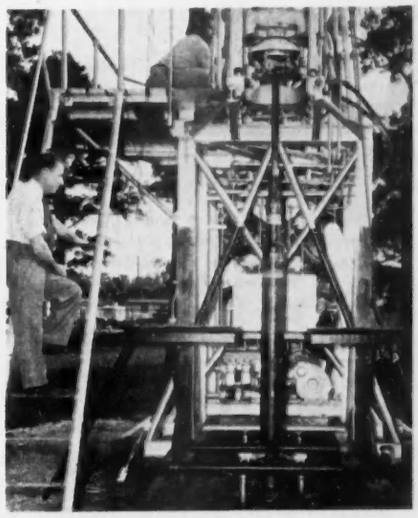
Mason B. Jones Named President Of the S. M. Jones Company

Mason B. Jones was elected president; Francis S. Oatman, treasurer; Edward G. Kirby, secretary; and Frank E. Stoll, assistant secretary, at the annual meeting of the board of directors of the S. M. Jones Company, Toledo and Tulsa.

New Tool-Tester Is Developed by Houston Oil Field Material Firm

A tool-testing rig designed by engineers of Houston Oil Field Material Company and erected on the grounds of HOMCO's Houston plant permits testing all new tools or improved old tools under simulated drilling conditions prior to use in the field. Each new product such as cutting and fishing tools, mills, bits, jars, and deflecting tools, is tested on the rig for close observation of performance under conditions approximating those found when drilling, to detect structural imperfections and allow corrections before introducing the product to the drilling industry.

Fabricated almost entirely in the Houston Oil Field Material shops, the tester includes a 20-foot mast set on a 12-foot sub-structure and mounted on skids made of heavy I-beams. The four



corners or the base are firmly tied down, and three guys extend from the top of the mast to deadmen anchored in concrete.

A 40-horsepower electric motor furnishes power for the rig, with rotary speed control effected by a transmission which provides five speeds ranging from 10 to 78 revolutions-per-minute, and equipped with a reversing clutch. On the drilling floor near the operator's position are also located the mud pump control lever and large clutch levers for the hoist and brake. The rig has a typical circulatory system consisting of a steel tank, a hydraulic pump with capacity of 1000 pounds per square inch, pressure gauges, flexible rotary hose, and flow lines.

A hydraulic head from a core drill unit is used in connection with the rotary, and by means of its two 4-inch pistons a maximum weight equivalent of 25,000 pounds may be placed on the bit or on the tool being tested. Liaison between the operator and the observer stationed below is effected by means of an inter-communication system, and duplicate pressure gauges are provided for both.

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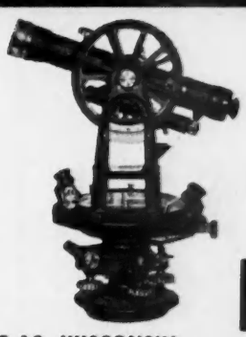

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TRADING POST SECTION
ON PAGE 72 OF THIS ISSUE

Consulting Firm in Petroleum, Engineering, Geology is Formed

E. O. Bennett, James O. Lewis and David G. Hawthorn have formed a partnership as consultants in petroleum and production engineering and geology. The firm name is Petroleum Consultants, Houston.

E. O. Bennett

Bennett, author of many articles on conservation and holder of the Hanlon Award of 1942 for distinguished service to the natural gasoline industry, was formerly chief petroleum engineer for Continental Oil Company. He has an M.E. degree in mechanical engineering from Stanford University, and was awarded an honorary doctor's degree from Texas A. & M. in 1943. Bennett pioneered secondary-oil recovery for Continental, is the inventor of and holds 11 patents covering the field of drilling and production of petroleum and natural gas.

Lewis was awarded the Anthony F. Lucas Medal February 27. He, too, obtained a degree from Stanford University, with a major in geology. He was employed by various petroleum companies in California and became supervisor of drilling operations on Indian lands for the U. S. Bureau of Mines. In 1919 he became petroleum geologist for the Bureau, and resigned in 1920 to enter private practice.

James O. Lewis

David G. Hawthorn

Hawthorn was graduated from the University of Colorado with an M.E. degree in 1928. He served with the Naval Ordnance Laboratory and Petroleum Administration for War, while on leave from Amerada Petroleum Corporation.

Hercules Tool Company Moves Into New Offices and Plant at Tulsa

The Hercules Tool Company, Tulsa, has completed moving into its new offices and plant, which is constructed of brick and tile. The plant adjoining the offices is constructed of steel.

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